

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: Gook Young Lee, et al.	:	
	:	Examiner: Nathan C. Uber
	:	
Serial No.: 10/599,606	:	Group Art Unit: 3622
	:	
Filed: October 3, 2006	:	Attorney Docket No.: 56587.42
	:	
For: METHOD AND SYSTEM FOR	:	
PROVIDING INFORMATION ON	:	
ARTICLE OF COMMERCE	:	Customer No.: 27128
	:	
	:	Confirmation No.: 1556

REPLY BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Examiner's Answer dated August 5, 2009, Applicant submits the following reply brief.

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1. **STATUS OF CLAIMS**

- Claims 1-3, 6, 7, 10, 11 and 17-18 are currently pending in the application. Claims 4-5, 8-9 and 12-16 have been cancelled.
- Under a Final Rejection mailed February 5, 2009, Claims 1-3, 6, 7, 10, 11 and 17-18 of the present application stand rejected under 35 U.S.C. 103(a) over U.S. Patent 7,107,226 issued to Cassidy et al., in view of U.S. Patent 7,043,471 issued to Cheung et al. and are the subject of this appeal. Claims 1 and 17 are the only independent claims.
- Applicants reserve their right to file additional applications to continue the prosecution of all withdrawn or cancelled claims.

2. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1 and 17 are independent claims. The remainders of the claims are dependent claims. Claims 1-3, 6, 7, 10, 11 and 17-18 stand rejected as being unpatentable under 35 U.S.C. 103(a) over U.S. Patent 7,107,226 issued to Cassidy et al. (hereinafter "Cassidy"), in view of U.S. Patent 7,043,471 issued to Cheung et al. ("Cheung").

The issues presented are whether claims 1-3, 6, 7, 10, 11 and 17-18 are obvious under 35 USC 103(a) over Cassidy in view of Cheung.

3. ARGUMENTS

I. **The Rejection of Claims 1-3, 6, 7, 10, 11 and 17-18 under 35 U.S.C. 103(a) over Cassidy in view of Cheung In The Final Office Action Was Improper Because Combination of Cassidy and Cheung Lacks Required Elements Of The Claims.**

While Cassidy Discloses Price Comparison Function, It Does Not Teach Or Suggest Charging Commission-like Fees For Price Comparison Advertising Service By Detecting A Click-through To The Internet Link Of Each Vendor By A Searcher.

The claimed invention recites the **First Group of limitations for price comparison advertising service** (maintaining and storing a goods information database in at least one memory, the goods information database for storing at least one search listing, the search listing including seller identification information and selling price information; receiving a search request for goods from a searcher; providing a search result list of the goods in response to the search request for the goods, the search result list of the goods including the search listings; providing an Internet link to a seller of goods associated with one of the provided search listings so that the searcher can purchase the goods at the seller's website) and **the Second Group of limitations for charging commission-like fees for price comparison advertising service by detecting a click-through to the Internet link of each vendor by a searcher** (detecting a click-through to the Internet link by the searcher; in response to the detected click-through, generating and storing selling price information by referring to selling price information included in the search listing selected by the searcher; and generating advertising costs, irrespective of purchase of the goods at the seller's website, for each seller for a first predetermined period based, at least in part, upon click-through information, a predetermined selling commission rate and the stored selling price information).

As previously noted, the Examiner rejected all the independent claims under 35 U.S.C. 103(a), as obvious over Cassidy in view of Cheung in the final Office Action. In doing so, the Examiner goes on to reference a portion of the disclosure of Cassidy in support of the Second Group of claimed limitations recited above. To be clear, the portion of the disclosure referenced by the Examiner states in full that:

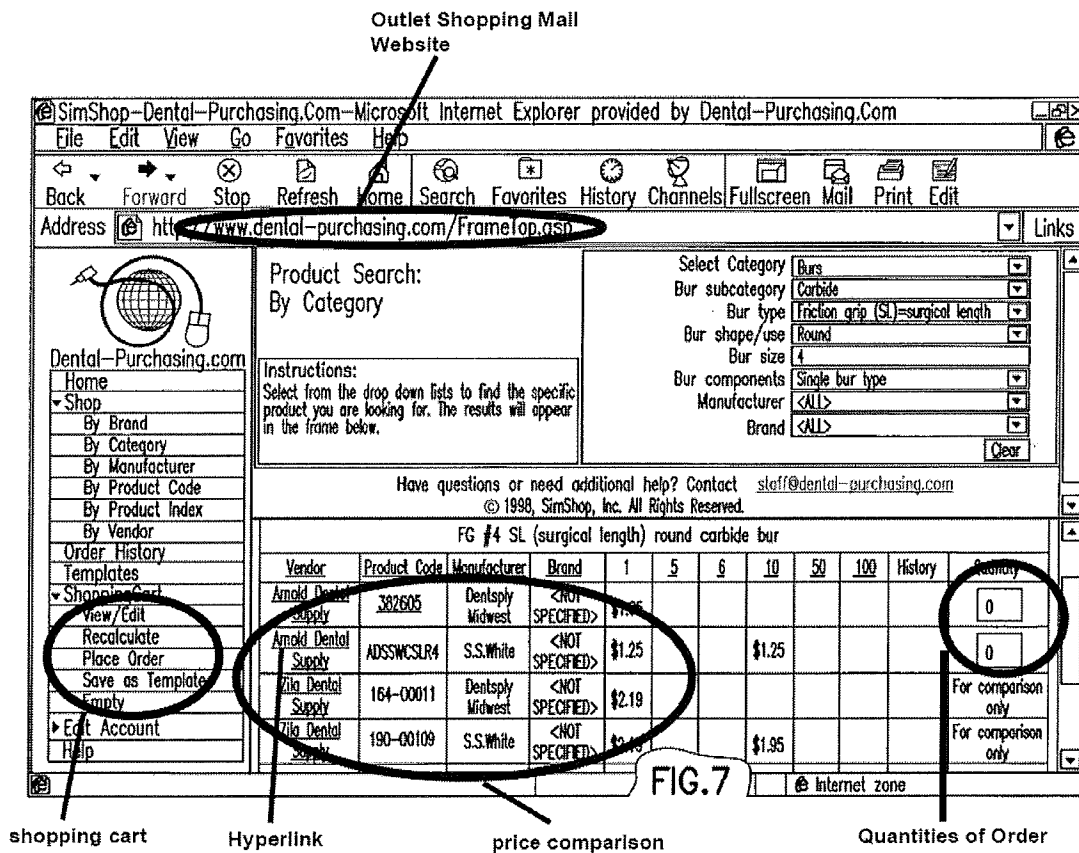
"The online comparison shopping system of the invention therefore operates as a virtual mall for the purveyed products. A direct transactional link is established between the product supplier and the purchaser, thereby facilitating and enabling electronic commerce involving such products. The vendor therefore has an advertising and promotional forum, and hyperlinks may be embedded in the system to the vendors' home pages or other Web sites. The system proprietor, in providing the shopping forum for the vendor's products, thereby provides an outlet service to the vendor, which may be compensated by a mutually agreed compensation schedule or commission rate."

Cassidy at Col. 9, Lines 49-60. Appellant notes that throughout the Examiner's answer the Examiner consistently criticizes the Appellant's arguments for generalizing and compartmentalizing the prior art references and for attempting to support Appellant's interpretation of Cassidy with reference to several broken quotations from the Cassidy disclosure.

Unfortunately, this is not an entirely accurate statement. Unlike the Examiner's characterization of Cassidy, throughout the Cassidy reference including 72 figures and the specification, the above-quoted paragraph is only a portion which the Examiner relies on to show that Cassidy teaches or suggests the Second Group of claimed limitations **for charging commission-like fees for price comparison advertising service by detecting a click-through to the Internet link of each vendor by a searcher**. None of Cassidy drawings shows price comparison search results including hyperlink without an order form for the electronic shopping

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cart service. For example, the Examiner continuously refers to Fig. 7 of Cassidy to show the price comparison service.



In reference to FIG. 7 of Cassidy above, reproduced for the Board's convenience with annotation, the system disclosed in the Cassidy reference is an online outlet store (or shopping mall) service system because it allows consumers to place an order on its own web site. The Cassidy website allows users to purchase products of third party vendors at its website (www.dental-purchasing.com) by using a virtual shopping cart, it tracks order history and it charges commission for sale/purchase of the products (i.e. financial transaction) at its website. As previously noted, the Cassidy references discloses more than one embodiment. In one embodiment, Cassidy discloses the online shopping system. In another embodiment, Cassidy discloses an incidental price comparison function for the online shopping website. While the

Cassidy reference displays a hyperlink to the individual vendors, however, it does not disclose charging any fee for click-through or the incidental price comparison service.

The Examiner relies heavily on the above portion of quotation. Appellant respectfully points out that in the context of the remaining disclosure of Cassidy, the portion of quotation explains that a commission rate is applied when a transaction occurs at the outlet website. To the contrary, the Examiner interprets that the portion of quotation "seemingly describing a process of charging a commission based on purchase is meant to define 'commission rate' not necessarily to limit the application of the commission." See the Examiner's Answer at Page 16, lines 3-7.

A prior art reference must be considered in its entirety, i.e., as a whole. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). One cannot take phrases out of context to support its contention. To that extent, Cassidy throughout its specification and drawings explains the "commission" or "commission rate" only in the following five paragraphs:

All of this information is preferably stored in another 5 tables (see FIGS. 56-58), including, for example, a Vendor Product table, a Vendor table, a Brand table, a Manufacturer table, and a Price table. Additionally, the Vendor's contact information is stored in a Contact Information table, along with the contact information (telephone and fax numbers, email addresses) of the vendor, for facilitating contact of the vendor by users of the on-line system. Other meaningful data that may be stored in the system includes date and time the product information was entered, the name of the individual who entered the product information, the status of products and vendors, the location of a picture of the product (if any), a detailed product description (if any), the location of vendor's Internet home page (if any), and the vendor's commission percentage, as paid by the vendor to the on-line system operator based on the sales of the vendor's wares at the on-line Web site in operation of the on-line system. (col. 7, lines 19-35)

The online comparison shopping system of the invention therefore operates as a virtual mall for the purveyed products. A direct transactional link is established between the product supplier and the purchaser, thereby facilitating and enabling electronic commerce involving such products. The vendor therefore

has an advertising and promotional forum, and hyperlinks may be embedded in the system to the vendors' home pages or other Web sites. The system proprietor, in providing the shopping forum for the vendor's products, thereby provides an outlet service to the vendor, which may be compensated by a mutually agreed compensation schedule or commission rate. (col. 9, lines 49-60).

The vendor maintenance aspect permits the operator to add new vendors to the system, as well as the addition of information concerning the contacts and commission information for the particular vendor. Vendors can preferably be deleted or disabled and their product availability can be tagged as orderable, non-orderable, and visible or non-visible to the users. A disabled vendor preferably remains in the database but invisible to the user. (Col. 18, lines 28-35).

As shown in FIG. 56, the database includes an Order Header table that includes an OrderHeader ID field providing an identifier for the order, and fields "Created On" to provide the date of the order, "Sales Tax" to identify the applicable state sales tax for the order transaction, "Shipping" to identify the shipping charges for the order transaction, "Total Amount" to identify the cost of the order, "LogonID (FK)" to specify the individual and/or group placing the order, "Quote Only" to designate the quotation character of the shopping basket contents in a non-purchase interaction, "All Commissions Paid" to denote the commission payment status of the transaction, "All Email Sent" to verify that electronic communications with the ordering party have been completed, and "Ship_ContactInfoID" to provide a number of the shipping documents accompanying the ordered goods when shipped to the purchaser. (col. 19, lines 18-33).

A "Vendor" table contains a "VendorID" field providing an identifier for the vendor. The fields in such table include "VendorName," providing the full business name of the vendor whose goods and/or services are offered at the Web site, "ContactInfoID (FK)" to provide the contact individual in the vendor's organization, "Bill_ContactInfoID (FK)" to specify the contact individual in the vendor organization who is responsible for billing issues, "Home Page" to specify the Universal Resource Locator (URL) or other identifier for the Web site of the vendor, that may be hyperlinked to the on-line shopping Web site, "Consumer Products" to identify any goods and/or services in the consumer products category, "Commission Percentage" to specify the percentage commission applicable to purchase transactions consummated at the Web site that involve such vendor's products, "Active" and "Archived" to indicate the currently active or alternatively inactive status of the vendor, "OrderActive" to denote the status of any outstanding order transactions involving the vendor, and "BrowseActive" to denote the viewable character of the wares offered by the vendor at the on-line shopping Web site. (col. 20, lines 7-27).

Cassidy clearly explains that the on-line system operator charges commission-like fee to the vendors "**based on the sales of the vendor's wares at the on-line Web site**" in operation of the on-line system. See col. 7, lines 32-35 and col. 20, lines 19-22.

The Examiner has taken the position that since the second quoted paragraph only describes storing process of the commission for each vendor, this portion of quotation cannot be limited to the application of the commission.

The question of obviousness is not whether the cited disclosure explicitly excludes the claimed limitation but whether the cited disclosure actually teaches or suggests the claimed limitation. Even assuming, for the sake of argument, that the second quoted paragraph only teaches storing process of the commissions charged to each vendor and does not explicitly "limit" its application only to the outlet services as the Examiner does assert, it still does not teach the claimed limitations **for charging commission-like fees for price comparison advertising service by detecting a click-through to the Internet link of each vendor by a searcher**. Further, in the context of the entire disclosure of Cassidy, Cassidy only discloses charging commission-like fee to the vendors "**based on the sales of the vendor's wares at the on-line Web site (i.e. outlet web site).**"

Further, the claimed invention includes the processes of applying the commission-like fee for the price comparison service (detecting a click-through to the Internet link by the searcher; in response to the detected click-through, generating and storing selling price information by referring to selling price information included in the search listing selected by the searcher; and generating advertising costs, irrespective of purchase of the goods at the seller's website, for each seller for a first predetermined period based, at least in part, upon click-through information, a predetermined selling commission rate and the stored selling price information).

If Cassidy does teach the application of commission for the price comparison service, it should disclose such application processes. However, Cassidy does not disclose a method of applying commission for the price comparison service. It is respectfully submitted that the Examiner only applies forbidden hindsight to fill in ambiguity of the quoted paragraph in Cassidy, which is used to support the obviousness rejections.

Given the foregoing, it is respectfully submitted that Cassidy fails to disclose limitations recited in claim 1 of the present application and Cheung still fails to remedy the deficiencies of Cassidy in teaching all the elements and limitations of claim 1. Neither Cheung nor Cassidy nor their combination disclose or teach all the elements and limitations of claim 1. Therefore, claim 1 is now in condition for allowance.

Claims 2, 3, 6, 7, 10 and 18

Claims 2, 3, 6, 7, 10 and 18 also stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Cassidy in view of Cheung.

The patentability of claims 2, 3, 6, 7, 10 and 18 rises or falls on the patentability of claim 1. It is admitted that the combination of Cassidy and Cheung teaches the limitations recited in the respective claims, except for the limitations recited in claim 1. These claims also contain the limitations of claim 1 which are neither taught by nor suggested by Cassidy in view of Cheung as discussed above. Therefore, claims 2, 3, 6, 7, 10 and 18 are now in condition for allowance.

It is respectfully submitted that the rejections of the claims are in error. It is further submitted that numerous of the claims have not been properly rejected particularly many of the obviousness rejections.

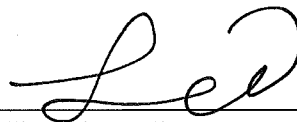
It is respectfully requested that the Board reverse the Examiner on all the rejections or in the alternative, remand this case back to the Examiner for proper prosecution.

4. **CONCLUSIONS**

The rejections under 35 U.S.C. §103 rejections advanced in the Final Office Action are contrary to law. All of the claims presently on appeal contain limitations which patentably distinguish them over the cited prior art. Accordingly, it is submitted that the rejections are improper and Applicant prays for a finding in his favor.

Respectfully submitted,

Date: October 1, 2009



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Appendix A – Claims Appendix

1. A computer-implemented method for generating a list of search results of goods in response to a search request for goods of a searcher and providing the searcher with goods information, the method comprising the steps of:

maintaining and storing a goods information database in at least one memory, the goods information database for storing at least one search listing, the search listing including seller identification information and selling price information;

receiving a search request for goods from a searcher;

providing a search result list of the goods in response to the search request for the goods, the search result list of the goods including the search listings;

providing an Internet link to a seller of goods associated with one of the provided search listings so that the searcher can purchase the goods at the seller's website;

detecting a click-through to the Internet link by the searcher;

in response to the detected click-through, generating and storing selling price information by referring to selling price information included in the search listing selected by the searcher; and

generating advertising costs, irrespective of purchase of the goods at the seller's website, for each seller for a first predetermined period based, at least in part, upon click-through information, a predetermined selling commission rate and the stored selling price information,

wherein the steps of detecting a click-through and generating advertising costs are performed by a server that comprises a processor and said at least one memory.

2. The method of claim 1, comprising the steps of:

storing the detected click-through information of the selected search listing for each seller during the first predetermined period;

generating cost-per-click information in accordance with a predetermined unit click cost and the detected click-through information; and

providing estimated advertising costs for each seller with respect to a second selling period, based on the advertising costs of selling price and the cost-per-click information.

3. The method of claim 2, wherein the step of providing estimated advertising costs comprises the steps of:

comparing the advertising costs of selling price with the cost-per-click information; and
selecting a smaller value between the advertising costs of selling price and the cost-per-click information for the estimated advertising costs.

4 ~ 5. (*Cancelled*)

6. The method of claim 2, further comprising the steps of:

receiving predetermined deposit from a seller for advertising before the first predetermined period starts;

charging the seller's account with advertising costs for the second predetermined period based upon the estimated advertising costs; and

providing the seller with outstanding balance information, the outstanding balance information being calculated by subtracting the predetermined deposit from the advertising costs for the second predetermined period.

7. The method of claim 2, further comprising the steps of:

receiving predetermined deposit from a seller for advertising before the first predetermined period starts; and

in case that a request for termination of advertising is received from the seller within the first selling period, charging the seller's account with the received deposit for the first predetermined period.

8 ~ 9. (*Cancelled*)

10. The method of claim 1, further comprising the steps of:

maintaining a user information database, the user information database for storing basic personal information on a plurality of searchers;

in response to a predetermined login request received from the searcher, authenticating the searcher by referring to the user information database; and

in response to the received click selection, generating detailed search information on goods associated with the selected search listing and storing the same in the user information database.

11. The method of claim 1, further comprising the step of:

generating advertising costs of selling price with respect to each of the sellers, by applying at least one different exemplary selling commission rate to total selling price with respect to each of the sellers during a predetermined period;

wherein the selling commission rate is determined to be the applied exemplary selling commission rate when the total amount of the advertising costs of selling price with respect to the plurality of sellers during the predetermined period is nearest to the total amount of the cost-per-click information with respect to the plurality of sellers during the predetermined period.

12-16. (*Canceled*)

17. A system for generating a list of search results of goods in response to a search request for goods of a searcher and providing the searcher with goods information, the system comprising:

a processor;

one or more memories to communicate with the processor, the one or more memories storing a goods information database, the goods information database storing a search listing including seller identification information and selling price information;

an interface, the interface receiving a search request for goods including a keyword from a searcher and providing an Internet link to a seller of goods associated with one of the provided search listings so that the searcher can purchase the goods at the seller's website;

a list generating module, in response to the search request for goods, the list generating module abstracting at least one search listing associated with the keyword from the goods

information database, the list generating module generating a list of search results of goods and transmitting the same to the searcher;

a record control module, in response to the received click selection of the searcher selecting any one search listing among the list of search results of goods, the record control module generating and storing click selection information and selling price information with respect to a first selling period for each seller;

a first advertising costs generating module, the first advertising costs generating module generating advertising costs for each seller for the first selling period, irrespective of purchase of the goods at the seller's website, based, at least in part, upon the click selection information, the selling price information and a predetermined commission rate; and

a second advertising costs generating module, the second advertising costs generating module generating estimated advertising costs information with respect to a second selling period, based on the generated advertising costs and click selection information.

18. The method of claim 1, wherein the step of providing the search result list of the goods comprises the step of:

sorting the at least one search listing in accordance with a predetermined criterion based on selling price information of the search listing.

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Appendix B – Evidence Appendix

U.S. Patents:

7,107,226
7,043,471



US007107226B1

(12) **United States Patent**
Cassidy et al.

(10) **Patent No.:** US 7,107,226 B1
(45) **Date of Patent:** Sep. 12, 2006

(54) **INTERNET-BASED ON-LINE COMPARISON SHOPPING SYSTEM AND METHOD OF INTERACTIVE PURCHASE AND SALE OF PRODUCTS**

(75) Inventors: **Patrick Cassidy**, Apex, NC (US);
James Evans, Cary, NC (US)

(73) Assignee: **Net32.com, Inc.**, Morrisville, NC (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 800 days.

(21) Appl. No.: 09/234,348

(22) Filed: Jan. 20, 1999

(51) **Int. Cl.**
G06H 17/60 (2006.01)
G06H 17/30 (2006.01)

(52) **U.S. Cl.** 705/26; 705/14; 707/3;
707/5; 707/102; 707/103

(58) **Field of Classification Search** 705/26,
705/27

See application file for complete search history.

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Primary Examiner—Yehdega Retta

(74) *Attorney, Agent, or Firm*—Marianne Fuierer; Steven Hultquist; Yongzhi Yang

(57) **ABSTRACT**

A searchable database comprising a multiplicity of tables including an attributes table and a values table for a multiplicity of target search items constructed and arranged so that selection of values for one or more target search item attributes yields an attribute-value construct specifying a particular one of said target search items and precluding an indeterminate search result. Such database may be employed in an online comparison shopping system comprising a database containing product information of multiple vendors, manufacturers and/or products and a user interface generating a virtual shopping cart, and constructed and arranged to enable a user to selectively aggregate an order in said virtual shopping cart, comprising products represented in said database, and means for electronically disaggregating said order to generate vendor-specific orders to respective vendors.

54 Claims, 77 Drawing Sheets

SimShop-Dental-Purchasing.Com-Microsoft Internet Explorer provided by Dental-Purchasing.Com

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By Product Code
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By Vendor
Order History
Templates
ShoppingCart
View/Edit
Recalculate
Place Order
Save as Template
Empty
Edit Account
Help

Product Search:
By Category

Instructions:
Select from the drop down lists to find the specific product you are looking for. The results will appear in the frame below.

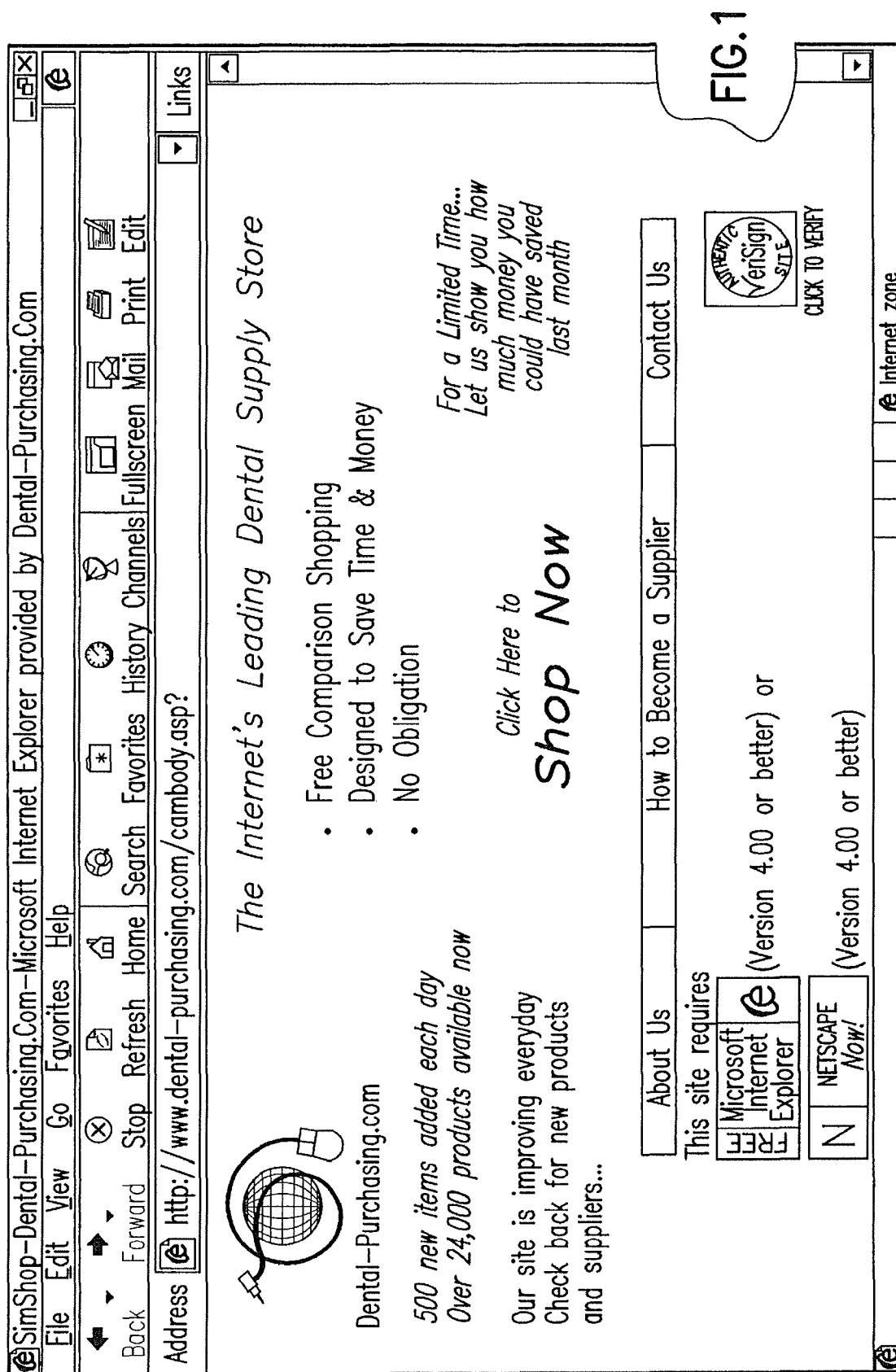
Select Category: Burs
Bur subcategory: Carbide
Bur type: Friction grip (SL)-surgical length
Bur shape/use: Round
Bur size: 4
Bur components: Single bur type
Manufacturer: <ALL>
Brand: <ALL>

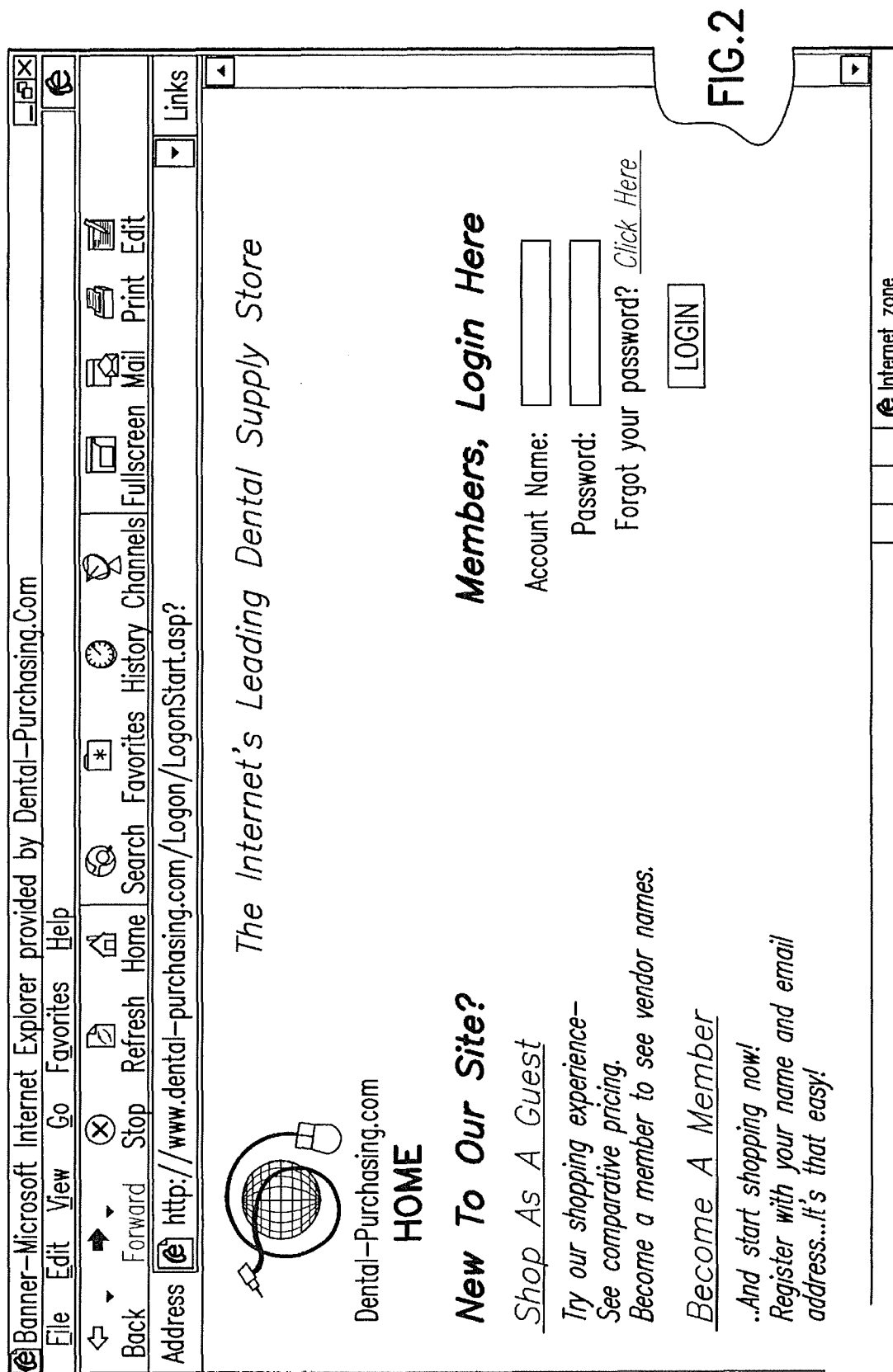
Have questions or need additional help? Contact staff@dental-purchasing.com
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FG #4 SL (surgical length) round carbide bur

Vendor	Product Code	Manufacturer	Brand	1	5	6	10	50	100	History	Quantity
Amold Dental Supply	382805	Dentsply Midwest	<NOT SPECIFIED>	\$1.05							0
Amold Dental Supply	A0SSWCSLR4	S.S.White	<NOT SPECIFIED>	\$1.25			\$1.25				0
Zila Dental Supply	164-00011	Dentsply Midwest	<NOT SPECIFIED>	\$2.19							For comparison only
Zila Dental Supply	190-00109	S.S.White	<NOT SPECIFIED>	\$2.19			\$1.95				For comparison only

Internet zone





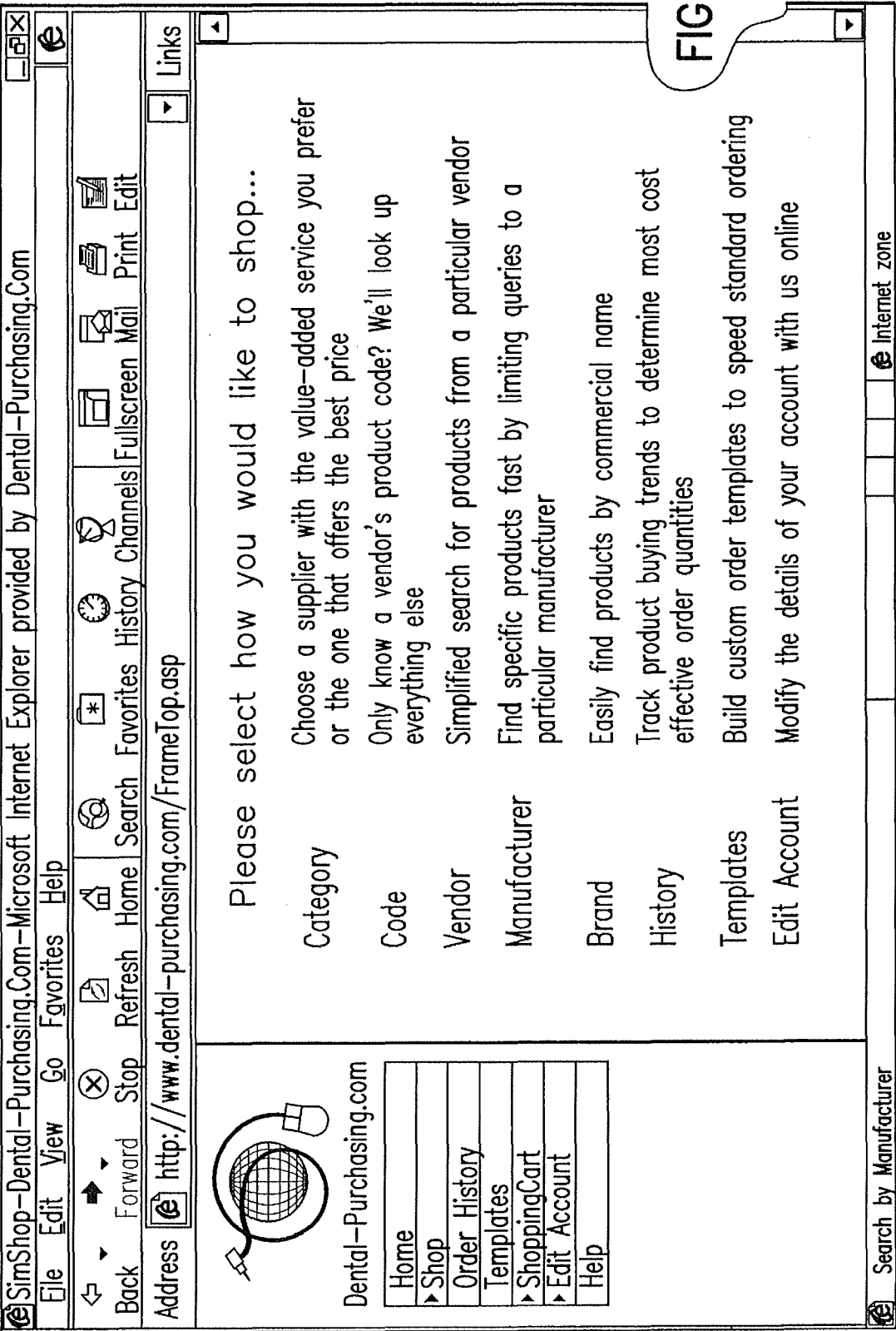


FIG. 3

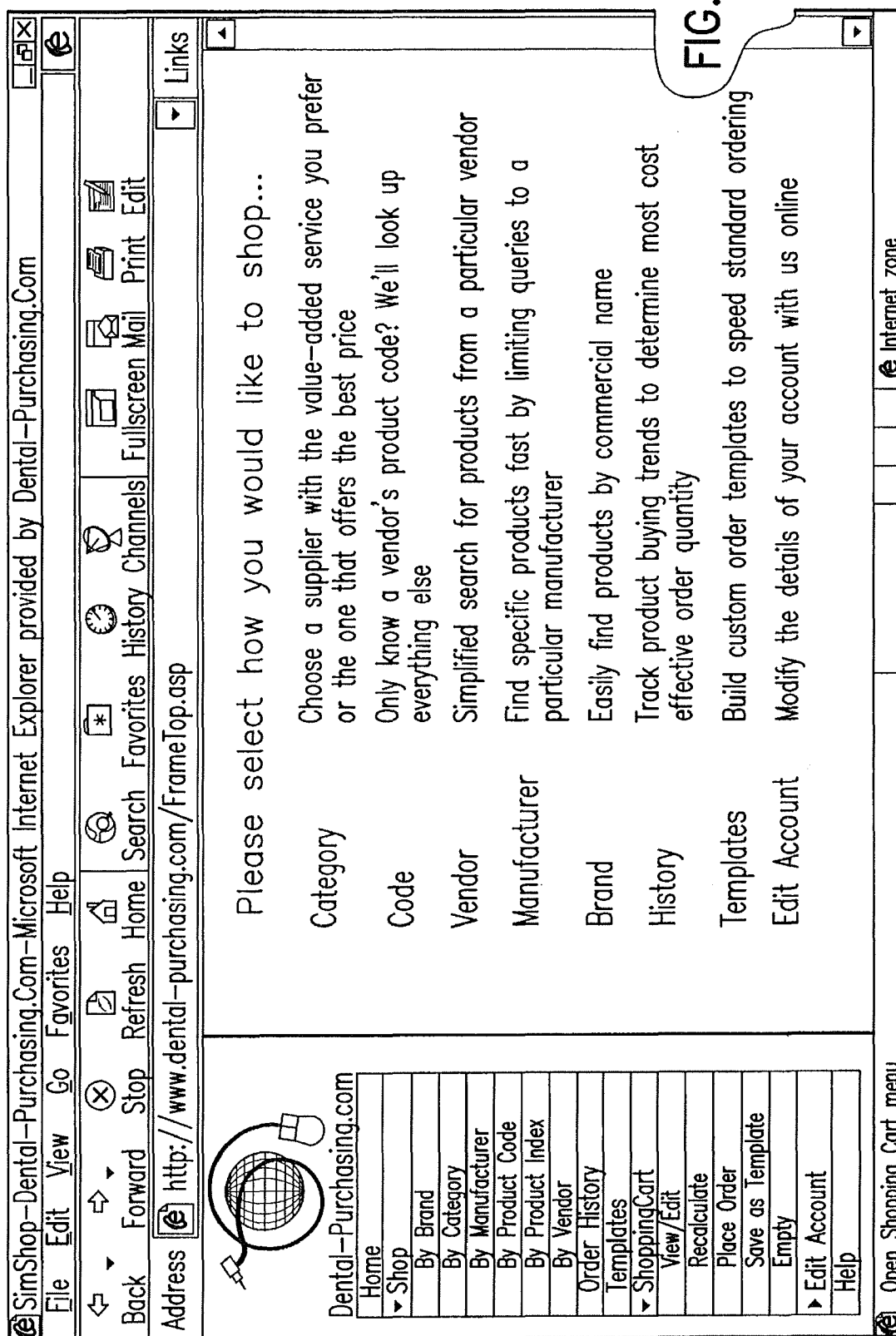


FIG. 4

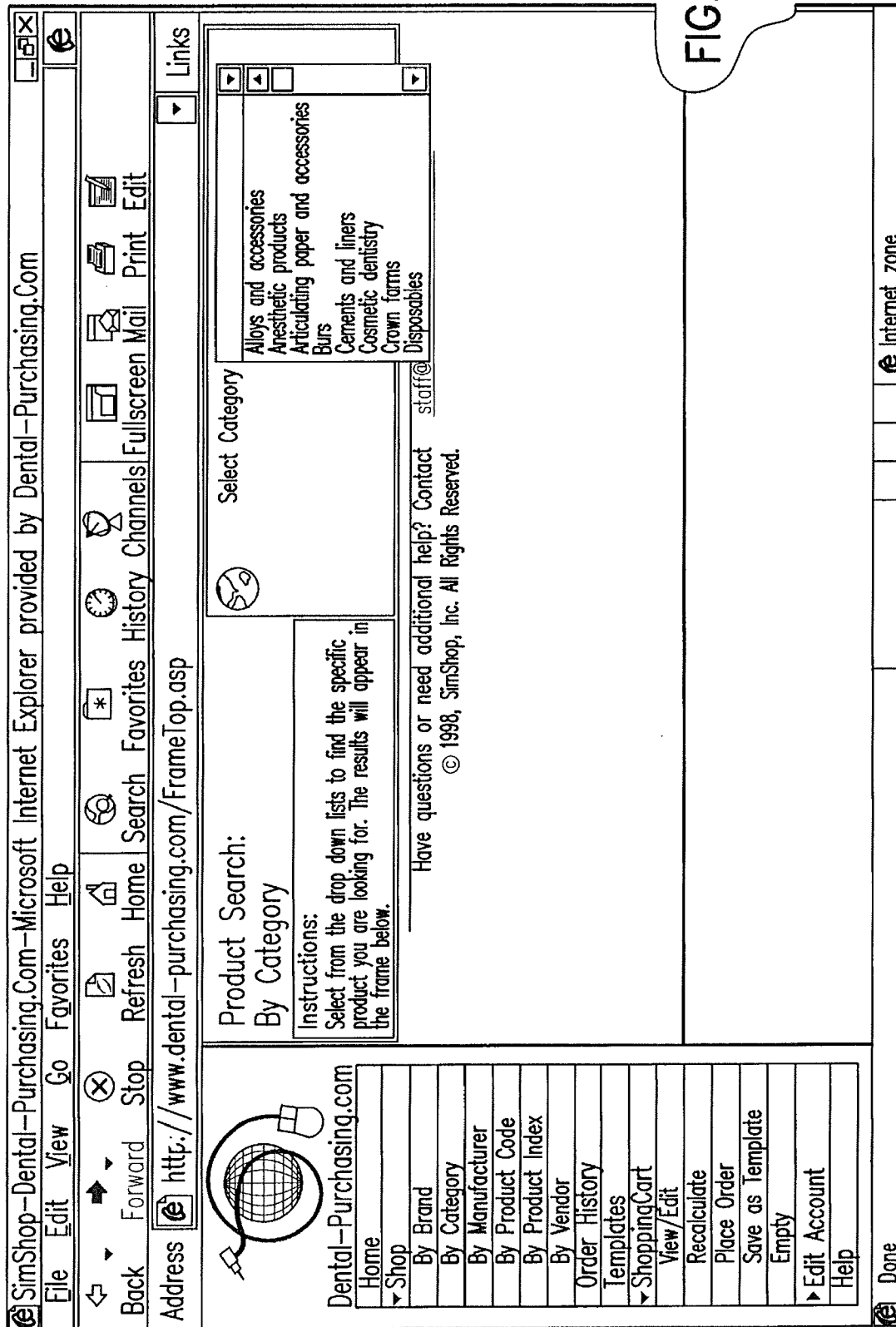


FIG. 5

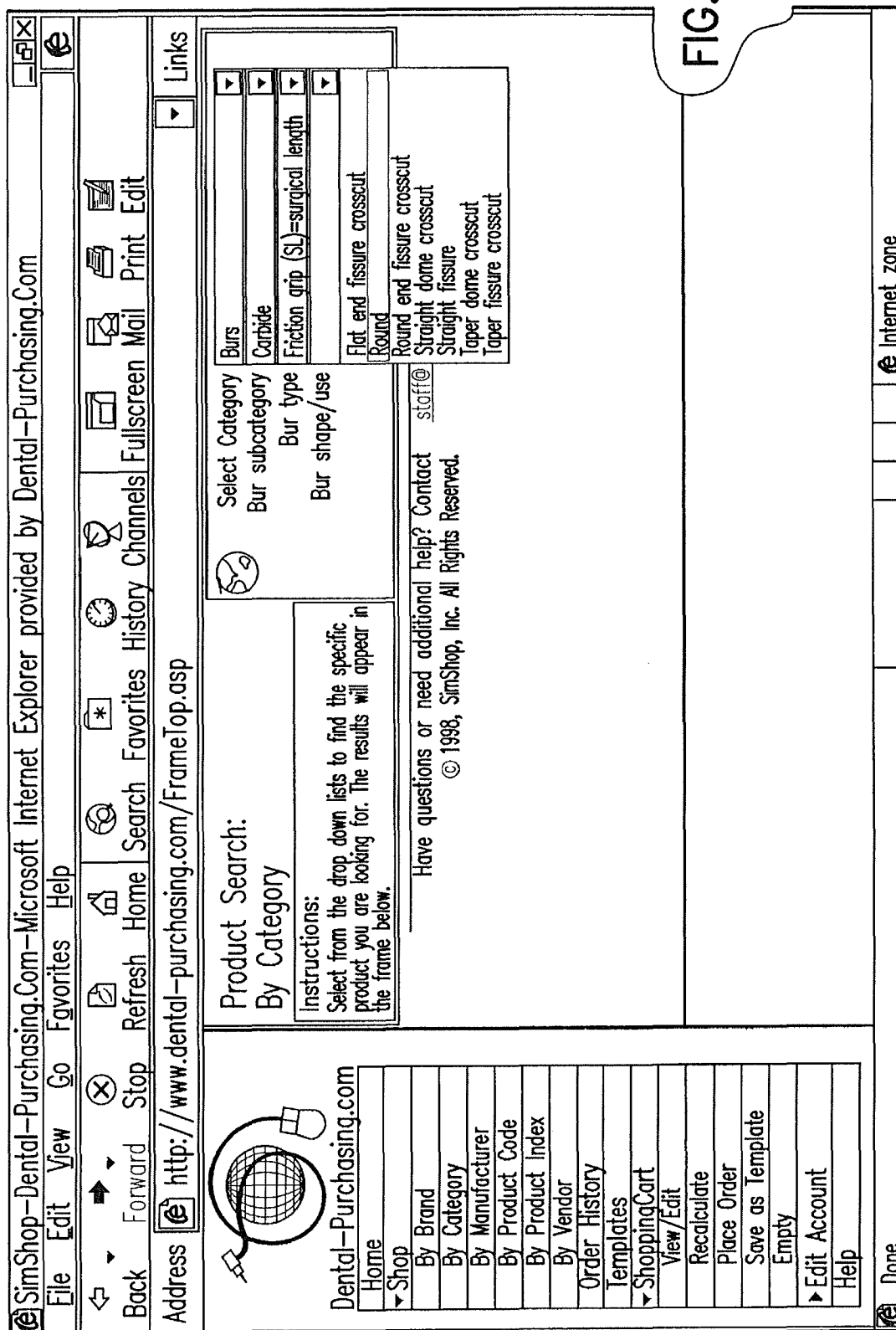


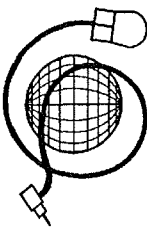
FIG. 6

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- Order History
- Templates
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- Recalculate
- Place Order
- Save as Template
- Empty
- Edit Account
- Help

Product Search:
By Category

Instructions:
Select from the drop down lists to find the specific product you are looking for. The results will appear in the frame below.

Select Category
Burs
Carbide
Bur type
Friction grip (SL)=surgical length
Round
Bur shape/use
Bur size
4
Bur components
Single bur type
Manufacturer
<ALL>
Brand
<ALL>
Clear

Have questions or need additional help? Contact staff@dental-purchasing.com
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FIG. 7

FG #4 SL (surgical length) round carbide bur											
Vendor	Product Code	Manufacturer	Brand	1	5	6	10	50	100	History	Quantity
Arnold Dental Supply	382605	Dentsply Midwest	<NOT SPECIFIED>	\$1.05							0
Arnold Dental Supply	ADSSWCSLR4	S.S.White	<NOT SPECIFIED>	\$1.25			\$1.25				0
Zila Dental Supply	164-00011	Dentsply Midwest	<NOT SPECIFIED>	\$2.19							For comparison only
Zila Dental Supply	190-00109	S.S.White	<NOT SPECIFIED>	\$2.19			\$1.95				For comparison only

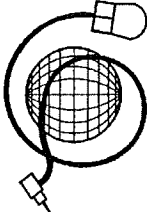
Internet zone

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- By Category
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- By Product Code
- By Product Index
- By Vendor
- Order History
- Templates
- ShoppingCart
- View/Edit
- Recalculate
- Place Order
- Save as Template
- Empty
- Edit Account
- Help

Product Search:
By Category

Instructions:
Select from the drop down lists to find the specific product you are looking for. The results will appear in the frame below.

Select Category

Personal protection subcategory

Glove material

Glove sterility

Glove powdering

Glove chlorination

Glove texture

Glove color

Glove flavor

Glove size/fitting

Glove packaging

Manufacturer

Brand

Clear

Latex gloves: non-sterile, powdered, non-chlorinated, smooth, natural color and flavor, not fitted. Box of 100 medium gloves.

Vendor	Product Code	Manufacturer	Brand	1	3	10	20	30	40	History	Quantity
Zila Dental Supply	658-00368	Zila Dental Supply	Latex exam glove (Zila Dental Supply)	\$4.95		\$4.49	\$3.95				For comparison only
Palm Beach Dental	PB5600M	Mexpo	Supergloves exam gloves	\$5.49							0
Fredentco	FGLM001	Fredentco	<NOT SPECIFIED>	\$5.79	\$5.29						0
Caroling	CD565-		Micro One exam								

FIG. 8

Internet zone

SimShop-Dental-Purchasing.Com-Microsoft Internet Explorer provided by Dental-Purchasing.Com

File Edit View Go Favorites Help

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Address <http://www.dental-purchasing.com/FrameTop.asp> Links

To see more of the product table, click, hold and drag the horizontal dividing bar up.

Vendor	Product Code	Manufacturer	Brand	1	3	10	20	30	40	History	Quantity
Action Team Medical	LP1070	Action Team Medical	ATM exam gloves				\$4.95				0
Arnold Dental Supply	ADLGHAM	Regaltex	Health Aid exam gloves	\$6.95		\$6.55	\$6.15	\$5.95			0
Arnold Dental Supply	AD695-5192	Johnson & Johnson Medical	Micro-Touch	\$8.95		\$8.55	\$8.25				0
Arnold Dental Supply	AD107-0695	Maloytex	<NOT SPECIFIED>	\$7.25		\$6.95	\$6.75	\$6.25			0
Carolina Dental Supply	CD100-2282	Maloytex	Redwood exam gloves	\$5.95							0
Carolina Dental Supply	CD565-9024	Microflex	Micro One exam gloves	\$5.95	\$4.95						0
Carolina Dental Supply	CD152-0026	Dash Medical	<NOT SPECIFIED>	\$8.50							0
Fredentco	11LATMCRS	Harnaes Kulzer	<NOT SPECIFIED>	\$9.25							0
Fredentco	FGLEM001	Fredentco	<NOT SPECIFIED>	\$5.79	\$5.29						0
Fredentco	F107-0695	Maloytex	<NOT SPECIFIED>	\$7.99	\$6.99						0
GloveSource Inc.	27837	<NOT SPECIFIED>	Aster exam gloves			\$5.95					0

FIG.9

Internet zone

Dental-Purchasing.com

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By Category

By Manufacturer

By Product Code

By Product Index

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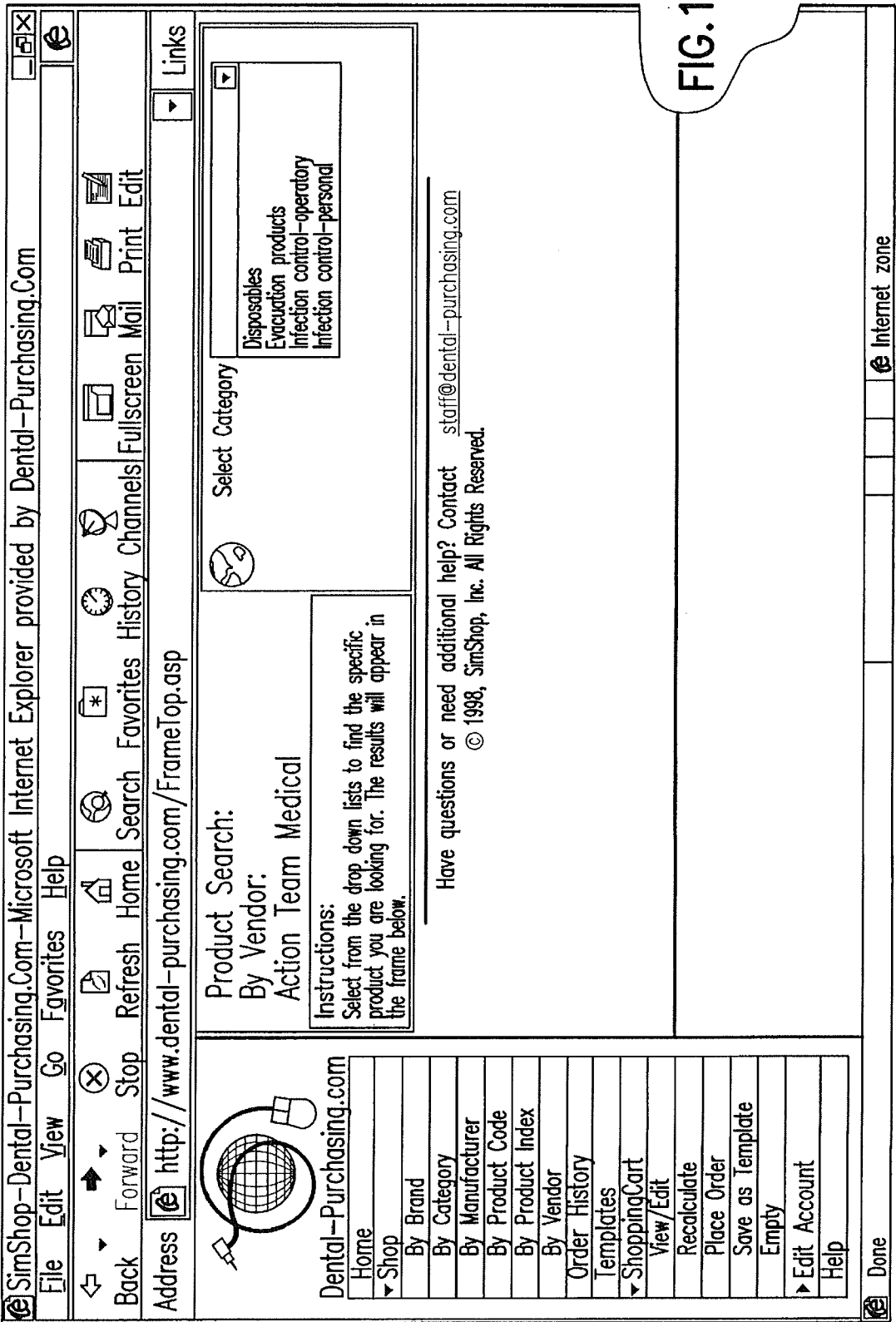
Place Order

Save as Template

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Edit Account

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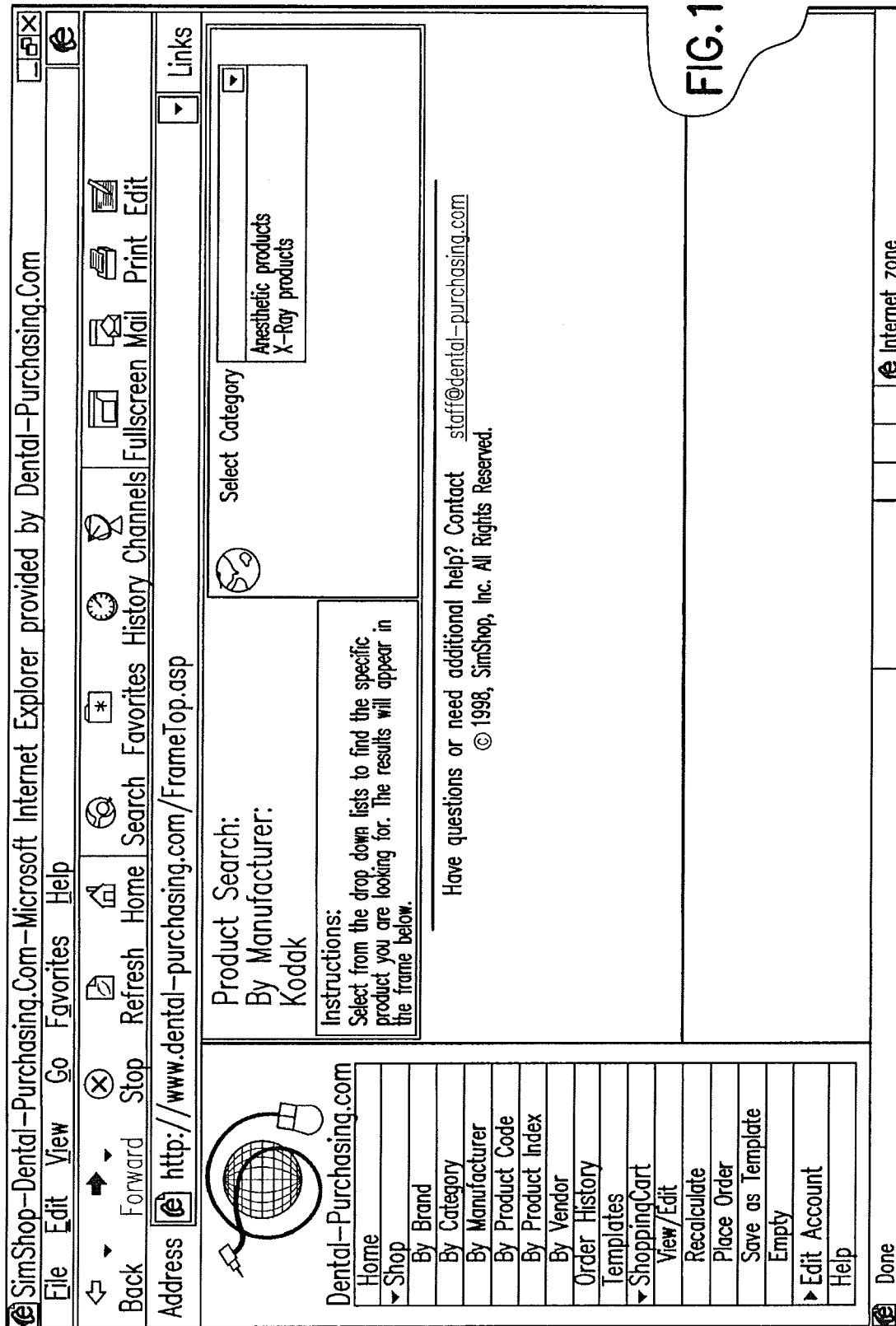


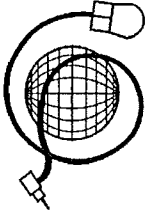
FIG. 11

SimShop-Dental-Purchasing.Com-Microsoft Internet Explorer provided by Dental-Purchasing.Com

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Address <http://www.dental-purchasing.com/FrameTop.asp> Links



Dental-Purchasing.com

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Product Search:

By Brand:
Ultraspeed DF-57

Instructions:
Select from the drop down lists to find the specific product you are looking for. The results will appear in the frame below.

Select Category X-Ray products

X-Ray subcategory X-Ray film

X-Ray use Intraoral

X-Ray type Periapical

X-Ray speed D (A.N.S.I.speed group)=ultraspeed

X-Ray size #2 standard (1 1/4 x 1 5/8)

X-Ray packet type Paper Vinyl

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Done Internet zone

FIG.12

FIG. 13

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Address <http://www.dental-purchasing.com/FrameTop.asp> Links

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Search for a product by a vendor's product code

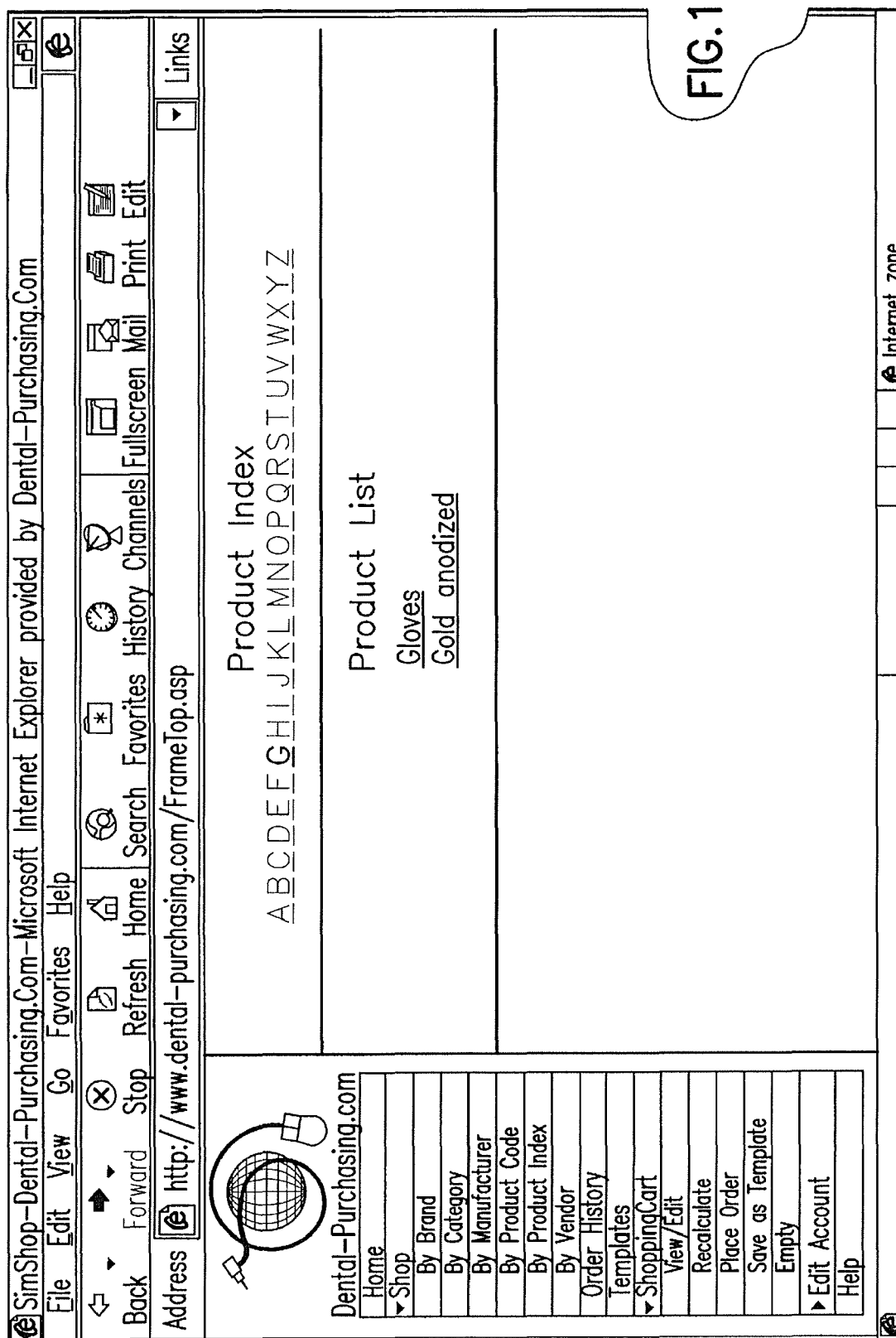
Select vendor from the following list:

Enter the vendor's Product Code

Latex gloves: non-sterile, powdered, non-chlorinated, smooth, natural color and flavor, not fitted. Box of 100 medium gloves.

Vendor	Product Code	Manufacturer	Brand	1	3	10	20	30	40	History	Quantity
Action Team Medical	LP1080	Action Team Medical	ATM exam gloves				\$4.95				0
Arnold Dental Supply	ADLGHAL	Regaltex	Health Aid exam gloves	\$6.95		\$6.55	\$6.15	\$5.95			0
Arnold Dental Supply	AD107-0989	Malaytex	<NOT SPECIFIED>	\$7.25		\$6.95	\$6.75	\$6.25			0
Carolina Dental Supply	CD100-2291	Malaytex	Redwood exam gloves	\$5.95							0
Carolina Dental Supply	CD565-9617	Microflex	Micro One exam gloves	\$5.95	\$4.95						0
Carolina Dental Supply	CD152-0711	Dash Medical	<NOT SPECIFIED>	\$8.50							0
Frederico	14GLCRA	Malaytex	<NOT SPECIFIED>	\$7.99	\$6.99						0
Frederico	11L1ATLCRS	Haraeus Kulzer	<NOT SPECIFIED>	\$9.25							0
Frederico	FGLEM001	Frederico	<NOT SPECIFIED>	\$5.79	\$5.29						0

Internet zone



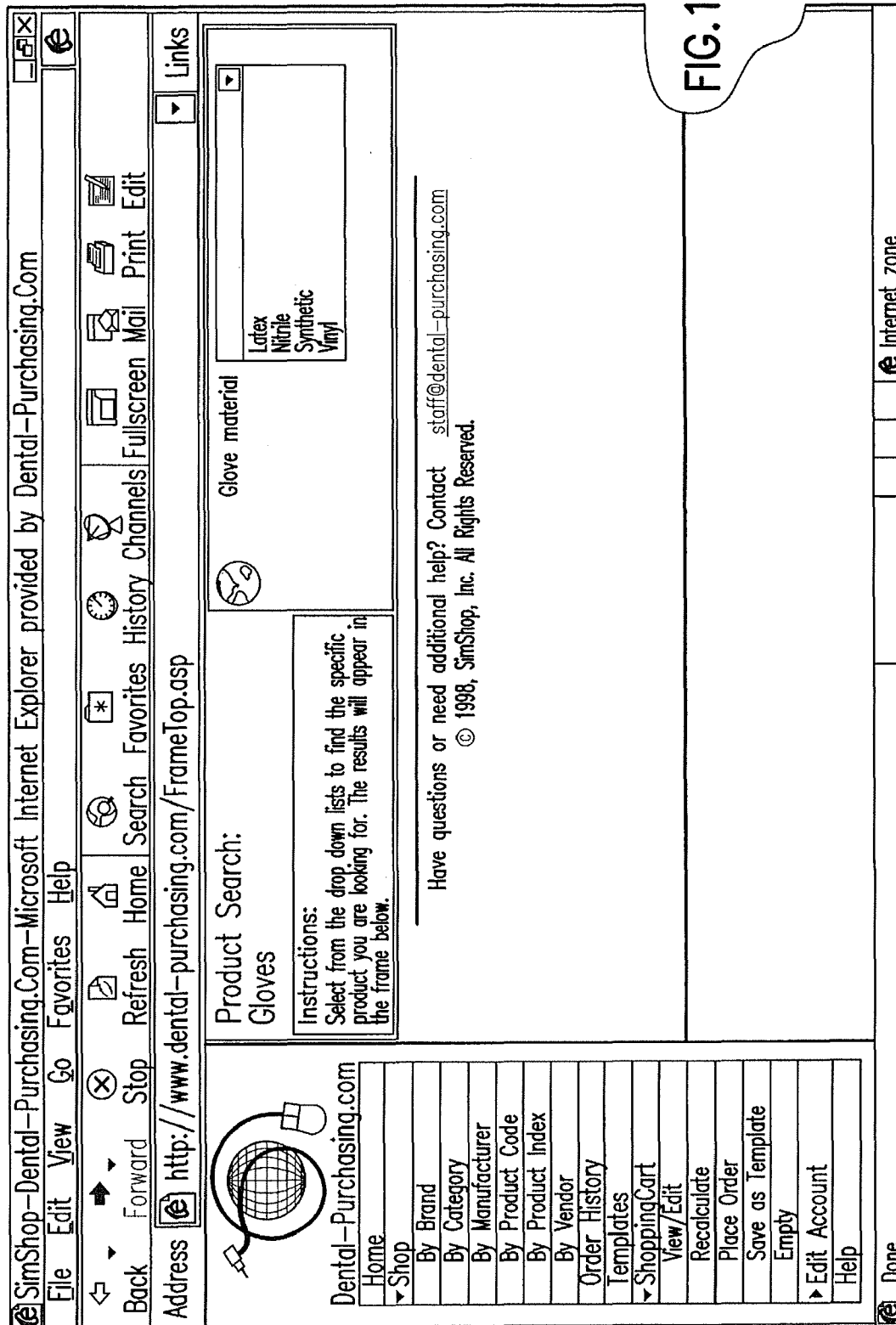


FIG. 15

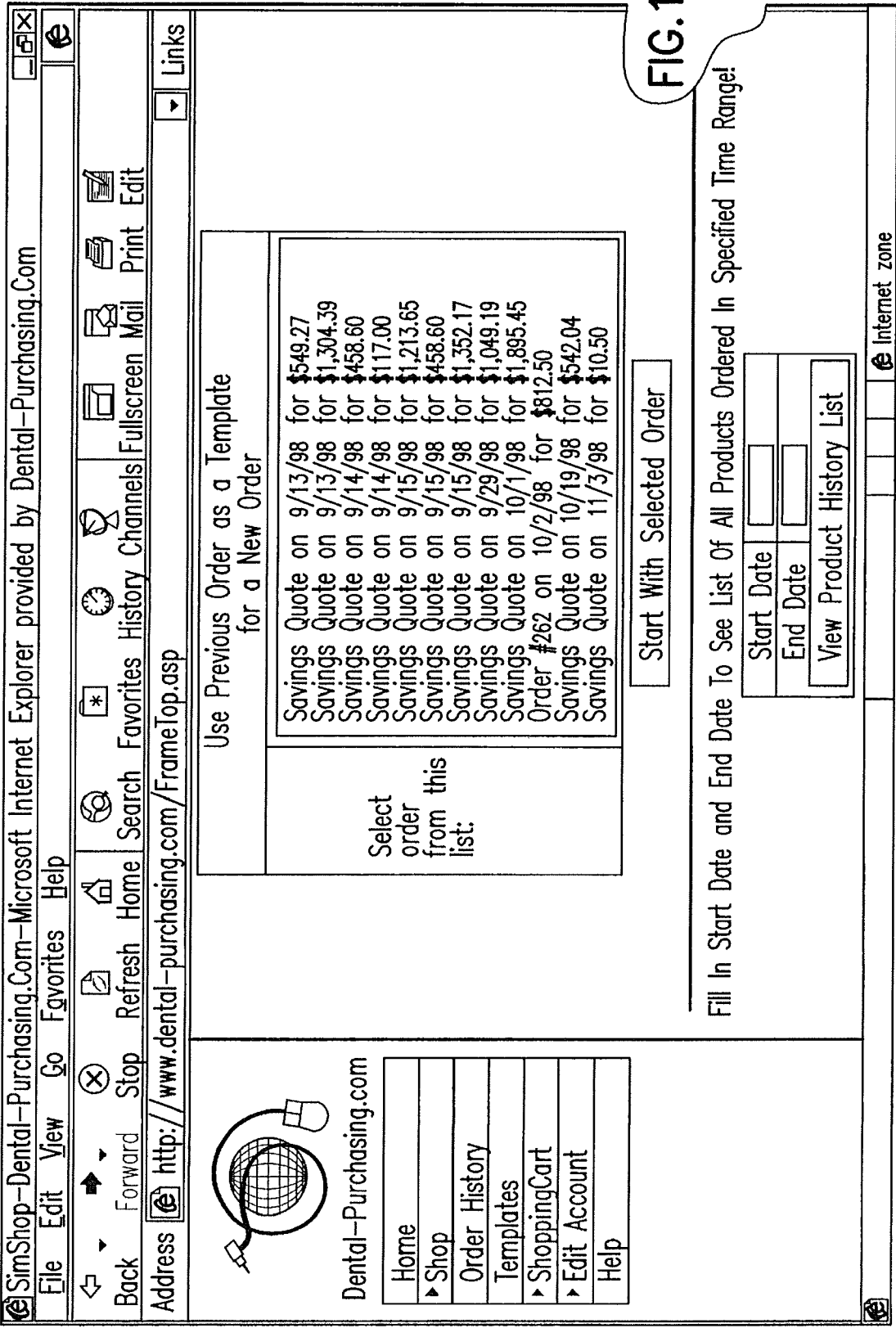


FIG. 16

FIG. 17

SimShop-Dental-Purchasing.Com-Microsoft Internet Explorer provided by Dental-Purchasing.Com

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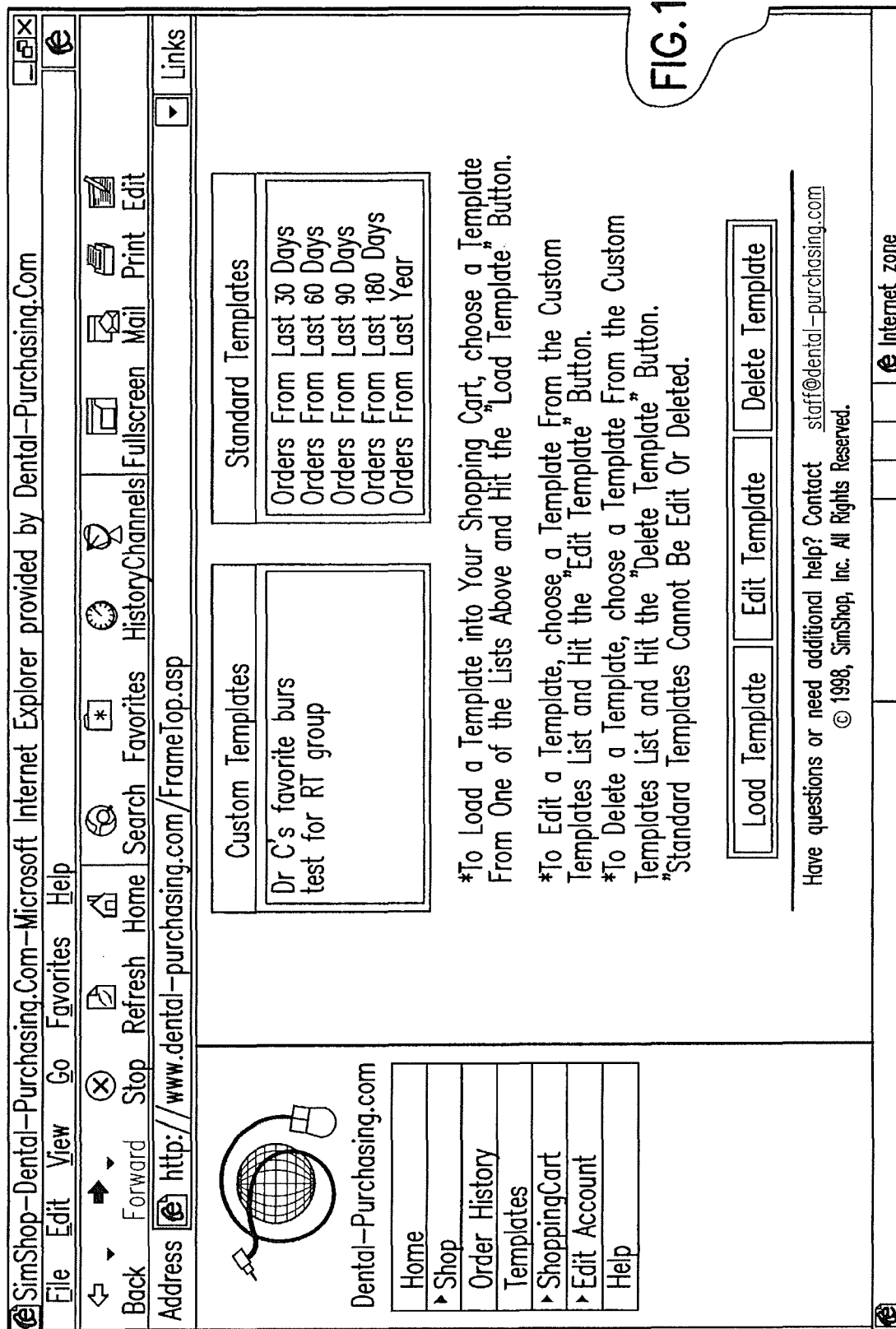
PATC's Historical Product List For
01/01/1998 To Today

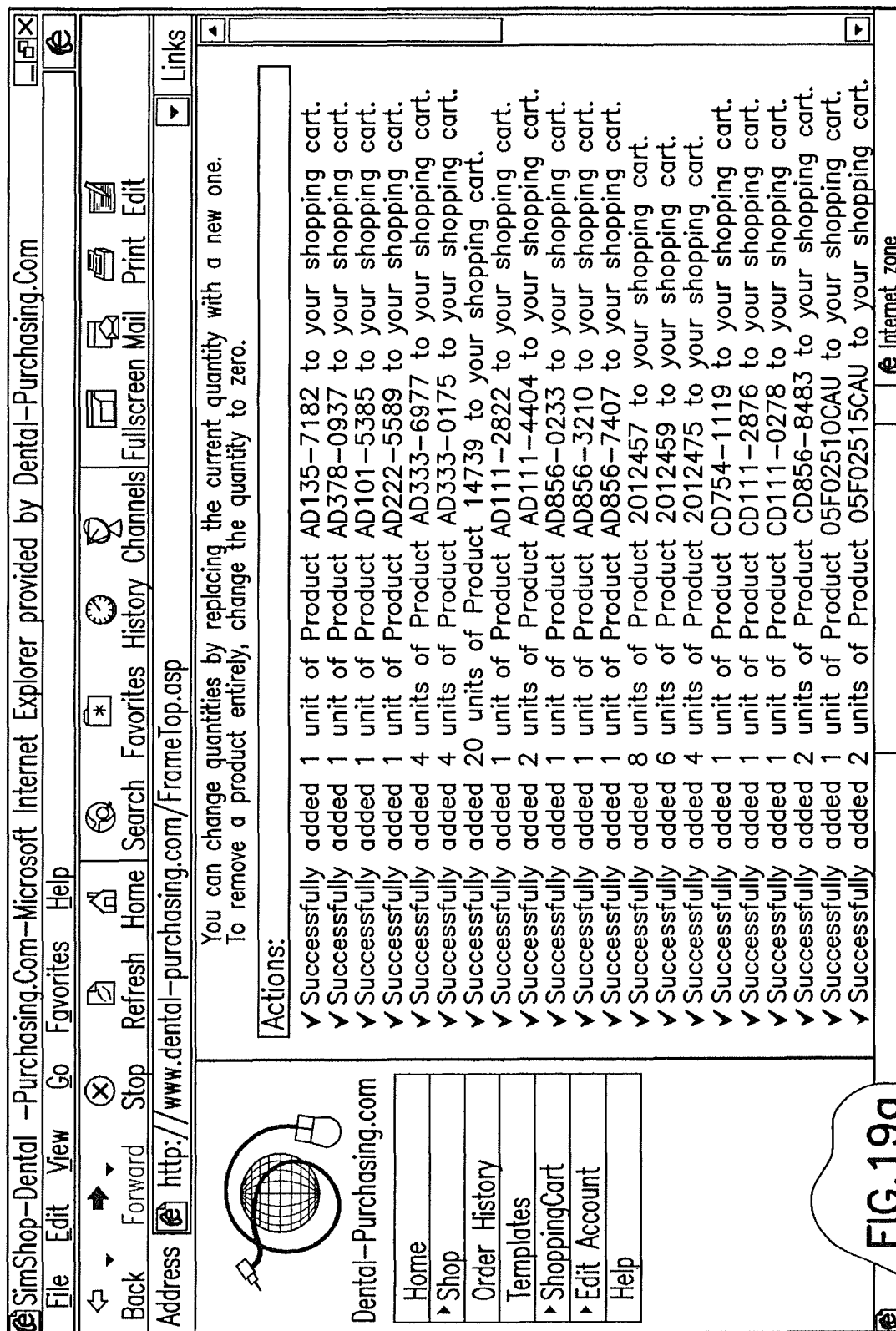
Vendor	Product Code	Manufacturer	Brand	Description	Purchase Details	Current Price
Arnold Dental Supply	AD111-2822	Kodak	Ultraspeed DF-54	#0 std (7/8" x 1 3/8") X-Ray film speed D ("ultraspeed") 1 film vinyl packet, box of 100 packets		
Arnold Dental Supply	AD378-0937	Premier	Sycamore wedges (Premier)	#13T anatomically shaped green Sycamore wood wedge (Premier), box of 400 wedges		
Arnold Dental Supply	AD111-4404	Kodak	Ultraspeed DF-57	#2 std (1 1/4" x 1 5/8") X-Ray film speed D ("ultraspeed") 2 film vinyl packet, box of 150 packets		
Arnold Dental Supply	AD333-6977	GC America	Spacer Trays (GC America)	#30D green perforated lower right/upper left plastic impression tray, box of 12 trays		
Arnold Dental Supply	AD333-0175	GC America	Spacer Trays (GC America)	#31D green perforated lower left/upper right plastic impression tray, box of 12 trays		
Arnold Dental Supply	AD135-7182	Van R	GingBraid	2N #2 medium (non-impregnated) braided yam retraction cord, tube of 120" cord (material not specified)		
Arnold						

Dental-Purchasing.com

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Address <http://www.dental-purchasing.com/FrameTop.asp>

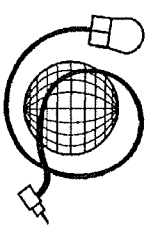
Links

✓ Successfully added 5 units of Product 382524 to your shopping cart.

Current Shopping Cart:

Vendor	Vendor Code	Manufacturer	Brand	Description	Unit price	Quantity	Ext. price	History
Arnold Dental Supply	AD135-7182	Van R	GingBraid retraction cord	2N #2 medium (non-impregnated) braided yarn retraction cord, tube of 120" cord (material not specified)	\$4.80	1	\$4.80	Purchase History
Arnold Dental Supply	AD378-0937	Premier	Sycamore wedges (Premier)	#13T anatomically shaped green Sycamore wood wedge (Premier), box of 400 wedges.	\$24.95	1	\$24.95	Purchase History
Arnold Dental Supply	AD101-5385	Banta Healthcare	Tidi Brand Deluxe bib	Mauve, plain rectangle (13 1/2" X 18") 3 ply paper/1 ply poly patient bib, case of 500 bibs.	\$19.55	1	\$19.55	Purchase History
Arnold Dental Supply	AD222-5589	Dentsply/Caulk	Jeltrate alginate (Dentsply/Caulk)	Fast set alginate, 1 pound can.	\$8.25	1	\$8.25	Purchase History
Arnold Dental Supply	AD333-6977	GC America	Spacer Trays (GC America)	#300 green perforated lower right/upper left plastic impression tray, box of 12 trays	\$5.95	4	\$23.80	Purchase History

Internet zone



 Dental-Purchasing.com

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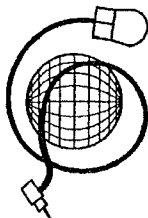
FIG.19b

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*To change a quantity, simply change the number directly in the textbox.
 *To remove an item, either type a "0" in the textbox or click on the checkbox in the Remove column.
 *To Save all changes, Hit the "Save Order Template" Button.
 *To Delete the Template, simply hit the "Delete Entire Template" Button.
 *To go back to the List of Templates Page, hit the "Load Template Page" Button.

Vendor	Vendor Code	Manufacturer	Brand	Description	Quan.	Remove	Status
Arnold Dental Supply	AD135-7182	Van R	GingBraid retraction cord	2N #2 medium (non-impregnated) braided yarn retraction cord, tube of 120" cord (material not specified)	1	<input type="checkbox"/>	OK
Arnold Dental Supply	AD378-0937	Premier	Sycamore wedges (Premier)	#13T anatomically shaped green Sycamore wood wedge (Premier), box of 400 wedges	1	<input type="checkbox"/>	OK
Arnold Dental Supply	AD101-5385	Banta Healthcare	Tidi Brand Deluxe bib	Mauve, plain rectangle (13 1/2" x 18") 3 ply paper/1 ply poly patient bib, case of 500 bibs.	1	<input type="checkbox"/>	OK
Arnold Dental Supply	AD222-5589	Dentsply/ Caulk	Jeltrate alginiate (Dentsply/ Caulk)	Fast set alginiate, 1 pound can.	1	<input type="checkbox"/>	OK
Arnold Dental Supply	AD333-6977	GC America	Spacer Trays (GC America)	#30D green perforated lower right/upper left plastic impression tray, box of 12 trays	4	<input type="checkbox"/>	OK
Arnold			Spacer	#31D green perforated lower			

Internet zone

FIG. 20

SimShop-Dental-Purchasing.Com-Microsoft Internet Explorer provided by Dental-Purchasing.Com

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Address <http://www.dental-purchasing.com/FrameTop.asp> Links

You can change quantities by replacing the current quantity with a new one.
To remove a product entirely, change the quantity to zero.

Current Shopping Cart:

Vendor	Vendor Code	Manufact.	Brand	Description	Unit price	Quantity	Ext. price	History
Arnold Dental Supply	AD111-7655	Kodak	Ultraspeed DF-56	#1 std (15/16" x 1 9/16") X-Ray film speed D ("ultraspeed") 1 film paper packet, box of 100 packets	\$27.95	1	\$27.95	
Arnold Dental Supply	17839	S.S.White	<NOT SPECIFIED>	FG #1/4 round carbide burr	\$11.20	10	\$11.99	
Carolina Dental Supply	CD228-1649	Septodont	Lignospan	Lidocaine 2% local anesthetic with epinephrine 1:100,000, 1 can of 50 (1.8 ml) capsules	\$13.25	1	\$13.25	
Carolina Dental Supply	CD856-8483	Kodak	Lidocaine	Lidocaine 2% local anesthetic with epinephrine 1:100,000, 1 can of 50 (1.8 ml) capsules	\$13.50	1	\$13.50	
Palin Beach Dental	127-3747	Kodak	Ultraspeed DF-56	#1 std (15/16" x 1 9/16") X-Ray film speed D ("ultraspeed") 1 film paper packet, box of 100 packets	\$29.49	1	\$29.49	
Total:							\$96.18	

Recalculate Place Order Empty Cart Zero Qty's Create Quote Save As Template

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Done

Dental-Purchasing.com

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FIG. 21

SimShop-Dental-Purchasing.Com-Microsoft Internet Explorer provided by Dental-Purchasing.Com

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Address <http://www.dental-purchasing.com/FrameTop.asp> Links

You can change quantities by replacing the current quantity with a new one.
To remove a product entirely, change the quantity to zero.

Current Shopping Cart:

Vendor	Vendor Code	Manufact.	Brand	Description	Unit price	Quantity	Ext. price	History
Arnold Dental Supply	AD111-7655	Kodak	Ultraspeed DF-56	#1 std (15/16" x 1 9/16") X-Ray film speed D ("ultraspeed") 1 film paper packet, box of 100 packets	\$27.95	1	\$27.95	
Arnold Dental Supply	17839	S.S.White	<NOT SPECIFIED>	FG #1/4 round carbide bur	\$1.20	10	\$11.99	
Carolina Dental Supply	CD228-1649	Septodont	Lignospan	Lidocaine 2% local anesthetic with epinephrine 1:100,000, 1 can of 50 (1.8 ml) carpules	\$13.25	0	\$0.00 Remove	
Carolina Dental Supply	CD856-8483	Kodak	Lidocaine	Lidocaine 2% local anesthetic with epinephrine 1:100,000, 1 can of 50 (1.8 ml) carpules	\$13.50	1	\$13.50	
Palm Beach Dental	127-3747	Kodak	Ultraspeed DF-56	#1 std (15/16" x 1 9/16") X-Ray film speed D ("ultraspeed") 1 film paper packet, box of 100 packets	\$29.49	1	\$29.49	
Total:							\$82.93	

Recalculate Place Order Empty Cart Zero Qty's Create Quote Save As Template

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Dental-Purchasing.com

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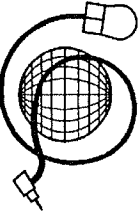
FIG.22

SimShop-Dental-Purchasing.Com-Microsoft Internet Explorer provided by Dental-Purchasing.Com

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Address <http://www.dental-purchasing.com/FrameTop.asp> Links

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You can change quantities by replacing the current quantity with a new one.
To remove a product entirely, change the quantity to zero.

Current Shopping Cart:

Vendor	Vendor Code	Manufact.	Brand	Description	Unit price	Quantity	Ext. price	History
Arnold Dental Supply	AD111-7655	Kodak	Ultraspeed DF-56	#1 std (15/16" x 1 9/16") X-Ray film speed D ("ultraspeed") 1 film paper packet, box of 100 packets	\$27.95	<input type="text" value="1"/>	\$27.95	
Arnold Dental Supply	17839	S.S.White	<NOT SPECIFIED>	FG #1/4 round carbide bur	\$1.20	<input type="text" value="10"/>	\$11.99	
Carroll Dental Supply	CD856-8483	Kodak	Lidocaine	Lidocaine 2% local anesthetic with epinephrine 1:100,000, 1 can of 50 (1.8 ml) capsules	\$13.50	<input type="text" value="1"/>	\$13.50	
Palm Beach Dental	127-3747	Kodak	Ultraspeed DF-56	#1 std (15/16" x 1 9/16") X-Ray film speed D ("ultraspeed") 1 film paper packet, box of 100 packets	\$29.49	<input type="text" value="1"/>	\$29.49	
Total:							\$82.93	

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Internet zone

FIG. 23

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Address <http://www.dental-purchasing.com/FrameTop.asp>

Product Purchase History-Microsoft Internet Explorer

Vendor: Palm Beach Dental
 Manufacturer: S.S.White
 Brand: NOT SPECIFIED

FG # 558 carbide bur

Time Frame Totals

Time Frame	Quant.	Total Cost
Last 30 Days	0	\$0.00
Last 90 Days	0	\$0.00
Last 180 Days	30	\$32.97
Last Year	30	\$32.97
All Orders	30	\$32.97

Product Purchase History

Order #	Date	Quant.	Unit Price	Total
262	10/2/98 7:10:00 AM	30	\$1.10	\$32.97

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Close

Internet zone

Dental-P

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Links

					Purchase History
\$3 Gates Glidden drill, 32 mm, box of 6 drills.	\$11.99	2	\$23.98		Purchase History
Sterile disposable 30 gauge short (1") metal hub needles, box of 100 needles	\$8.39	4	\$33.56		Purchase History
6" x 6" rubber dental dam, medium gauge, fruit scented, assortment of pink, blue, and purple. 1 square yard box (36 pieces of 6" x 6")	\$9.49	3	\$28.47		Purchase History
FG #245 carbide bur	\$1.10	30	\$32.97		Purchase History
FG #558 carbide bur	\$1.10	30	\$32.97		Purchase History
FG #7901 12 blade needle shaped finishing bur	\$4.99	5	\$24.95		Purchase History
FG #7408 12 blade egg shaped finishing bur	\$4.99	5	\$24.95		Purchase History
Total:			\$818.50		

Zero Qty's Create Quote Save As Template

Internet zone

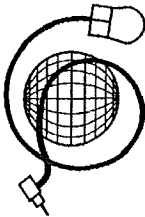
FIG. 23a

SimShop-Dental-Purchasing.Com-Microsoft Internet Explorer provided by Dental-Purchasing.Com

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Address <http://www.dental-purchasing.com/FrameTop.asp> Links



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Dental-Purchasing.com Savings Quote

Vendor	Vendor Code	Description	Unit price	Ext. price	Your Ext. Price	Your Unit Price	Your Vendor
Arnold Dental Supply	A0111-7655	#1 std (15/16" x 1 9/16") X-Ray film speed D ("ultraspeed") 1 film paper packet, box of 100 packets	\$27.95	\$27.95	\$31.95	\$31.95	Vendor A
Arnold Dental Supply	17839	FG #1/4 round carbide bur	\$1.20	\$11.99	\$14	\$1.40	Vendor A
Carolina Dental Supply	C0856-8483	Lidocaine 2% local anesthetic with epinephrine 1:100,000, 1 can of 50 (1.8 ml) carpules	\$13.50	\$13.50	\$14.95	\$14.95	Vendor B
Palm Beach Dental	127-3747	#1 std (15/16" x 1 9/16") X-Ray film speed D ("ultraspeed") 1 film paper packet, box of 100 packets	\$29.49	\$29.49			
Total:				\$82.93 plus s/h	\$60.90 plus s/h		

TO ACCOUNT:

Internet zone

FIG. 24

Dental-Purchasing Quote-Microsoft Internet Explorer provided by Dental-Purchasing.Com

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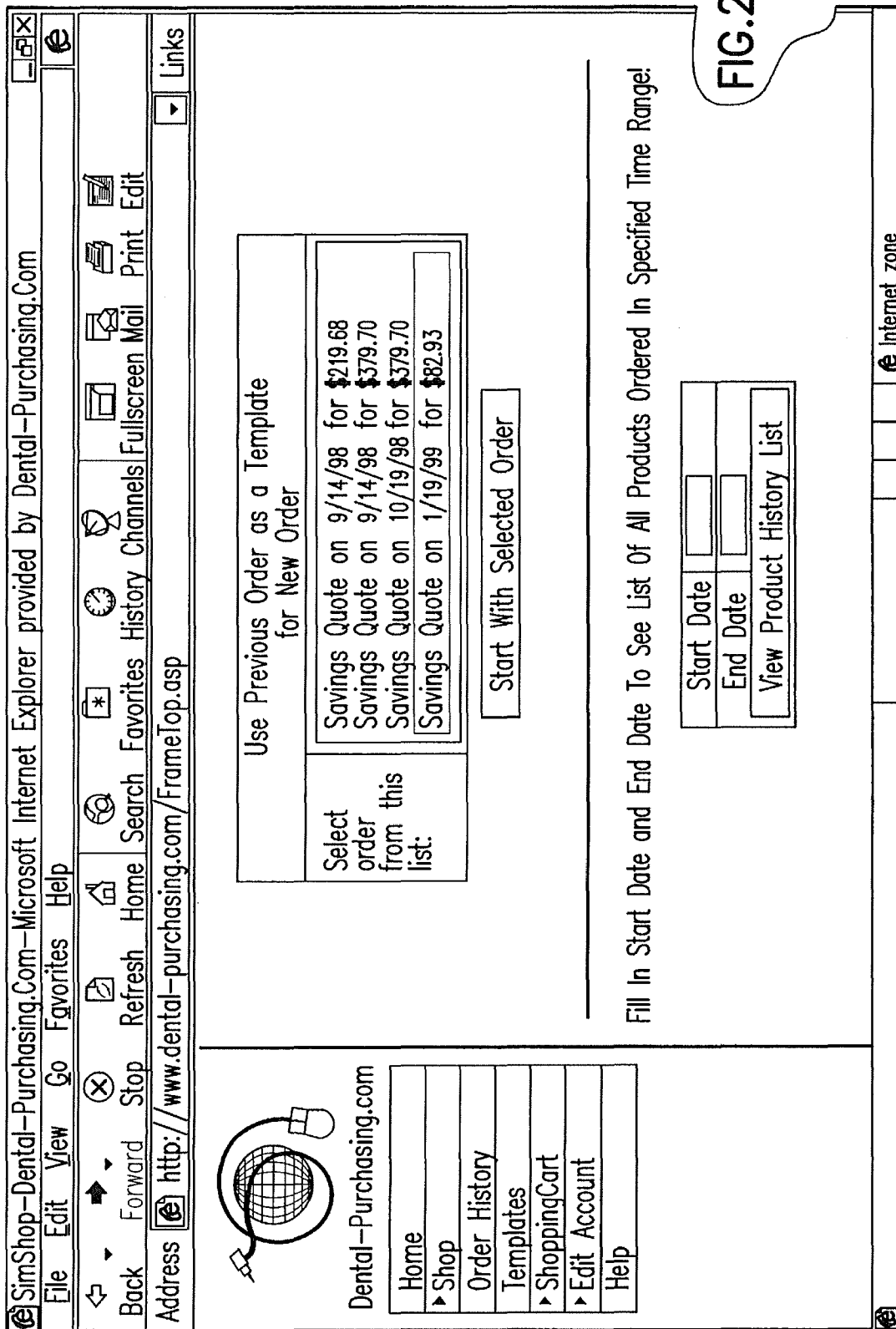
Address <C:\TEMP\NT\quote.htm> Links

As per your request, we have placed your order history into our system. Your order is on the right while the lowest prices in our database are listed on the left. When you return to the main search page of Dental-Purchasing.Com and select Order History, you will be able to use this quote as a template for your next order. You will, of course, be able to use this pre-formed shopping cart as is or modify it to match your current needs. We look forward to helping you save time and money on your dental supply purchasing. Please let us know if there is any other way that we can be of service.

Vendor	Vendor Code	Description	Unit price	Ext. price	Your Ext. Price	Your Unit Price	Your Vendor
Arnold Dental Supply	AD111-7655	#1 std (15/16" x 1 9/16") X-Ray film speed D ("ultraspeed") 1 film paper packet, box of 100 packets	\$27.95	\$27.95	\$31.95	\$31.95	Vendor A
Arnold Dental Supply	17839	FG #1/4 round carbide bur	\$1.20	\$11.99	\$14.00	\$1.40	Vendor A
Carolina Dental Supply	CD856-8483	Lidocaine 2% local anesthetic with epinephrine 1:100,000, 1 can of 50 (1.8 ml) carpules	\$13.50	\$13.50	\$14.95	\$14.95	Vendor B
Palm Beach Dental	127-3747	#1 std (15/16" x 1 9/16") X-Ray film speed D ("ultraspeed") 1 film paper packet, box of 100 packets	\$29.49	\$29.49	\$31.49	\$31.49	Vendor B
Total:				\$82.93 plus s/h	\$92.39 plus s/h		

My Computer

FIG.25

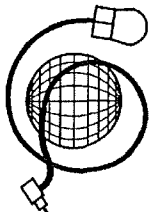


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Address <http://www.dental-purchasing.com/FrameTop.asp> Links



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Save Your New Order Template Here!

TEMPLATE NAME:

Frequently ordered items

Save Order Template

View Shopping Cart

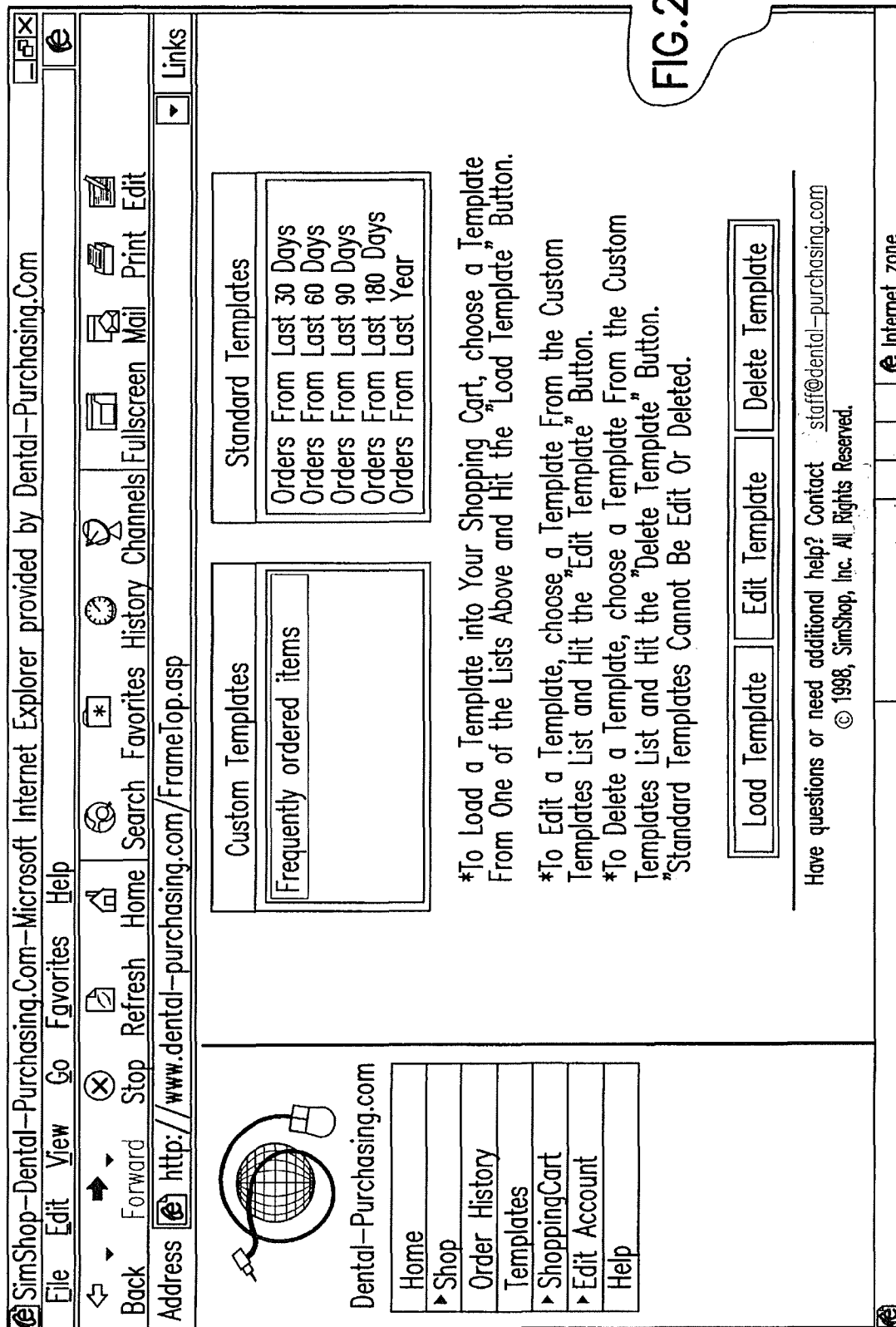
Empty Cart

Your current shopping cart is listed below. If you are satisfied with your order, fill in a name for the template and click on the Save Template! button at the top of the form. If you would like to make any changes to the items on this order, click [here](#) Or hit the View Shopping Cart button at the top of the page.

Vendor	Vendor Code	Manufact.	Brand	Description	Quantity
Arnold Dental Supply	AD111-7655	Kodak	Ultraspeed DF-56	#1 std (15/16" x 1 9/16") X-Ray film speed D ("ultraspeed") 1 film paper packet, box of 100 packets	1
Arnold Dental Supply	17839	S.S.White	<NOT SPECIFIED>	FG #1/4 round carbide bur	10
Carolina Dental Supply	CD856-8483	Kodak	Lidocaine	Lidocaine 2% local anesthetic with epinephrine 1:100,000, 1 can of 50 (1.8 ml) carpules	1
Palm Beach Dental	127-3747	Kodak	Ultraspeed DF-56	#1 std (15/16" x 1 9/16") X-Ray film speed D ("ultraspeed") 1 film paper packet, box of 100 packets	1

Have questions or need additional help? Contact staff@dental-purchasing.com Internet zone

FIG.27

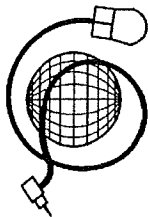


SimShop-Dental-Purchasing.Com-Microsoft Internet Explorer provided by Dental-Purchasing.Com

File Edit View Go Favorites Help

Back Forward Stop Refresh Home Search Favorites History Channels Fullscreen Mail Print Edit

Address <http://www.dental-purchasing.com/FrameTop.asp> Links



Dental-Purchasing.com

- Home
- Shop
- Order History
- Templates
- ShoppingCart
- Edit Account
- Primary Contact
- Billing Contact
- Shipping Address
- Credit Card Info.
- Change Password
- Change Java/ActiveX
- Help

Primary Contact Maintenance

Primary Contact

Name:* Mr First: James MI: R Last: Evans

Email:* jrevans@simshop.com

Company Name: SimShop

Address:* 104 Tapestry Terrace

Address 2:

City, State, Zip:* Cary State: NC Postal Code: 27511

Phone:* Area: 919 Phone: 4609536 Ext.:

Fax: Area: Fax: Ext.:

Have questions or need additional help? Contact staff@dental-purchasing.com

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Internet zone

FIG. 29

SimShop-Dental-Purchasing.Com-Microsoft Internet Explorer provided by Dental-Purchasing.Com

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Back Forward Stop Refresh Home Search Favorites History Channels Fullscreen Mail Print Edit

Address <http://www.dental-purchasing.com/FrameTop.asp> Links

Billing Contact Maintenance

Billing Contact

Mr. ☐ First: James ☐ Mi: R ☐ Last: Evans

Email:

Company Name:

Address:

Address 2:

City, State, Zip:

Phone:

Fax:

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Internet zone

Dental-Purchasing.com

- Home
- Shop
- Order History
- Templates
- ShoppingCart
- Edit Account
- Primary Contact
- Billing Contact
- Shipping Address
- Credit Card Info.
- Change Password
- Change Java/ActiveX
- Help

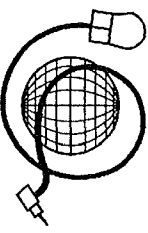
FIG. 30

SimShop-Dental-Purchasing.Com-Microsoft Internet Explorer provided by Dental-Purchasing.Com

File Edit View Go Favorites Help

Back Forward Stop Refresh Home Search Favorites History Channels Fullscreen Mail Print Edit

Address <http://www.dental-purchasing.com/FrameTop.asp> Links



Dental-Purchasing.com

- Home
- Shop
- Order History
- Templates
- ShoppingCart
- Edit Account
- Primary Contact
- Billing Contact
- Shipping Address
- Credit Card Info.
- Change Password
- Change Java/ActiveX
- Help

Shipping Address Maintenance

Name:* Mr. First: James Mi: R Last: Evans

Email:* jrevans@simshop.com

Company Name: SimShop

Address:* 104 Tapestry Terrace

Address 2:

City, State, Zip:* Cary State: NC Postal Code: 27511

Phone:* Area: 919 Phone: 4609536 Ext.:

Fax: Area: Fax: Ext.:

Shipping Contact

Have a questions or need additional help? Contact staff@dental-purchasing.com

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Internet zone

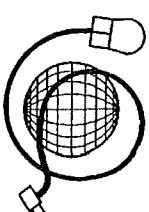
FIG. 31

SimShop-Dental-Purchasing.Com-Microsoft Internet Explorer provided by Dental-Purchasing.Com

File Edit View Go Favorites Help

Back Forward Stop Refresh Home Search Favorites History Channels Fullscreen Mail Print Edit

Address <http://www.dental-purchasing.com/FrameTop.asp> Links



Dental-Purchasing.com

- Home
- Shop
- Order History
- Templates
- ShoppingCart
- Edit Account
- Primary Contact
- Billing Contact
- Shipping Address
- Credit Card Info.
- Change Password
- Change Java/ActiveX
- Help

Credit Card Maintenance

<input checked="" type="radio"/> VISA <input type="radio"/> MasterCard	<input type="radio"/>
Card #:	0000-0000-0000-0000
Expiration date:	Month <input type="text" value="03"/> Year <input type="text" value="1999"/>

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Internet zone

FIG.32

SimShop-Dental-Purchasing.Com-Microsoft Internet Explorer provided by Dental-Purchasing.Com

File Edit View Go Favorites Help

Back Forward Stop Refresh Home Search Favorites History Channels Fullscreen Mail Print Edit

Address <http://www.dental-purchasing.com/FrameTop.asp> Links

Change Your Password Here

Current Password:

New Password:

Confirm New Password:

Have questions or need additional help? Contact staff@dental-purchasing.com
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Navigation Menu:

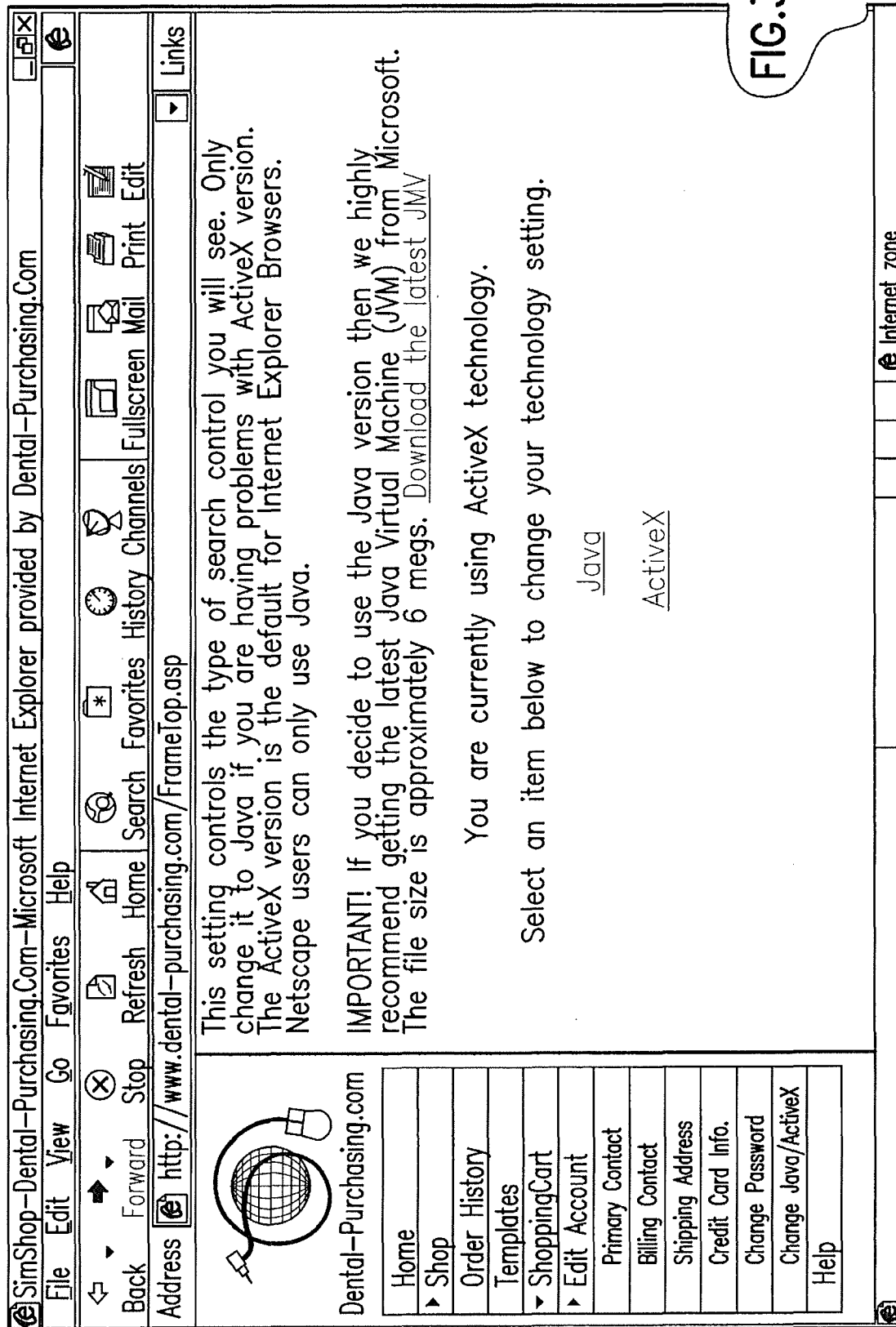
- Home
- Shop
- Order History
- Templates
- ShoppingCart
- Edit Account
- Primary Contact
- Billing Contact
- Shipping Address
- Credit Card Info.
- Change Password
- Change Java/ActiveX
- Help

Footer:

Dental-Purchasing.com

Internet zone

FIG. 33



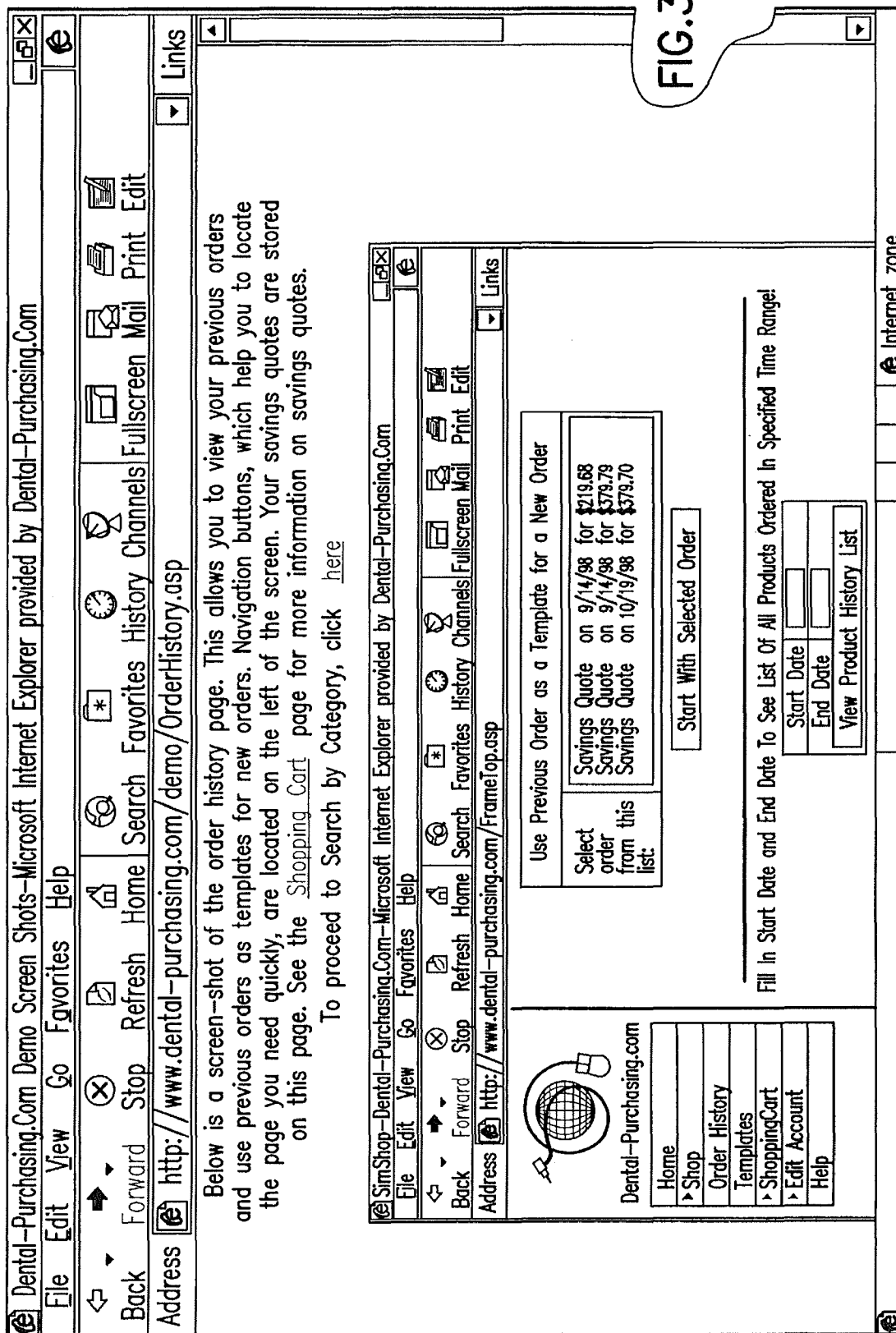


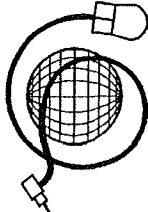
FIG. 35

SimShop-Dental-Purchasing.Com-Microsoft Internet Explorer provided by Dental-Purchasing.Com

File Edit View Go Favorites Help

Back Forward Stop Refresh Home Search Favorites History Channels Fullscreen Mail Print Edit

Address <http://www.dental-purchasing.com/FrameTop.asp> Links



Dental-Purchasing.com

- Home
- Shop
- Order History
- Templates
- ShoppingCart
- View/Edit
- Recalculate
- Place Order
- Save As Template
- Empty
- Edit Account
- Help

Ship To:

Mr. James R Evans
SimShop
104 Tapestry Terrace
Cary, NC 27511

104 Tapestry Terrace Cary, NC
104 Tapestry Terrace Cary, NC
1234Main St. APT 345 Raleigh, NC

Dental-Purchasing.com
Purchase Order

If you are satisfied with your order, click on the Order! button at the bottom of the form. If you would like to make any changes to the items on this order, click [here](#) to return to the shopping cart.

NOTE: Your order will be separated and sent to each vendor and appropriate shipping and handling charges will be added. Click on the Vendor's Name to view their shipping and handling information. Dental-Purchasing.Com is not responsible for order fulfillment. For additional information, please read our [disclaimer](#).

Allow Substitution of Products? (Default is No To All) ☐ Yes ☒ To All

Vendor	Vendor Code	Manufact.	Brand	Description	Unit Price	Quan.	Ext. Price	Substitution
Arnold Dental Supply	AD111-7655	Kodak	Ultraspeed DF-56	#1 std (15/16" x 1 9/16") X-Ray film speed D ("ultraspeed") 1n film paper	\$27.95	1	\$27.95	<input type="radio"/> Yes <input checked="" type="radio"/> No

Internet zone

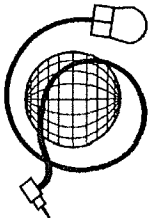
FIG. 36a

SimShop-Dental-Purchasing.Com-Microsoft Internet Explorer provided by Dental-Purchasing.Com

File Edit View Go Favorites Help

Back Forward Stop Refresh Home Search Favorites History Channels Fullscreen Mail Print Edit

Address <http://www.dental-purchasing.com/FrameTop.asp> Links



Dental-Purchasing.com

- Home
- Shop
- Order History
- Templates
- ShoppingCart
- View/Edit
- Recalculate
- Place Order
- Save As Template
- Empty
- Edit Account
- Help

Allow Substitution of Products? (Default is No To All) ☐ Yes To All

Vendor	Vendor Code	Manufact.	Brand	Description	Unit Price	Quan.	Ext. Price	Substitution
Arnold Dental Supply	AD111-7655	Kodak	Ultraspeed DF-56	#1 std (15/16" x 1 9/16") X-Ray film speed D ("ultraspeed") 1 film paper packet, box of 100 packets	\$27.95	1	\$27.95	<input type="radio"/> Yes <input checked="" type="radio"/> No
Arnold Dental Supply	17839	S.S.White	<NOT SPECIFIED>	FG #1/4 round carbide bur	\$1.20	10	\$11.99	<input type="radio"/> Yes <input checked="" type="radio"/> No
Carolina Dental Supply	CD856-8483	Kodak	Lidocaine	Lidocaine 2% local anesthetic with epinephrine 1:100,000, 1 can of 50 (1.8 ml) carpules	\$13.50	1	\$13.50	<input type="radio"/> Yes <input checked="" type="radio"/> No
Total:							\$53.44 plus s/h	

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Internet zone

FIG. 36b

FIG. 37

SimShop-Dental-Purchasing.Com-Microsoft Internet Explorer provided by Dental-Purchasing.Com

File Edit View Go Favorites Help

Back Forward Stop Refresh Home Search Favorites History Channels Fullscreen Mail Print Edit

Address <http://www.dental-purchasing.com/FrameTop.asp> Links

Dental-Purchasing.com

Order Confirmation

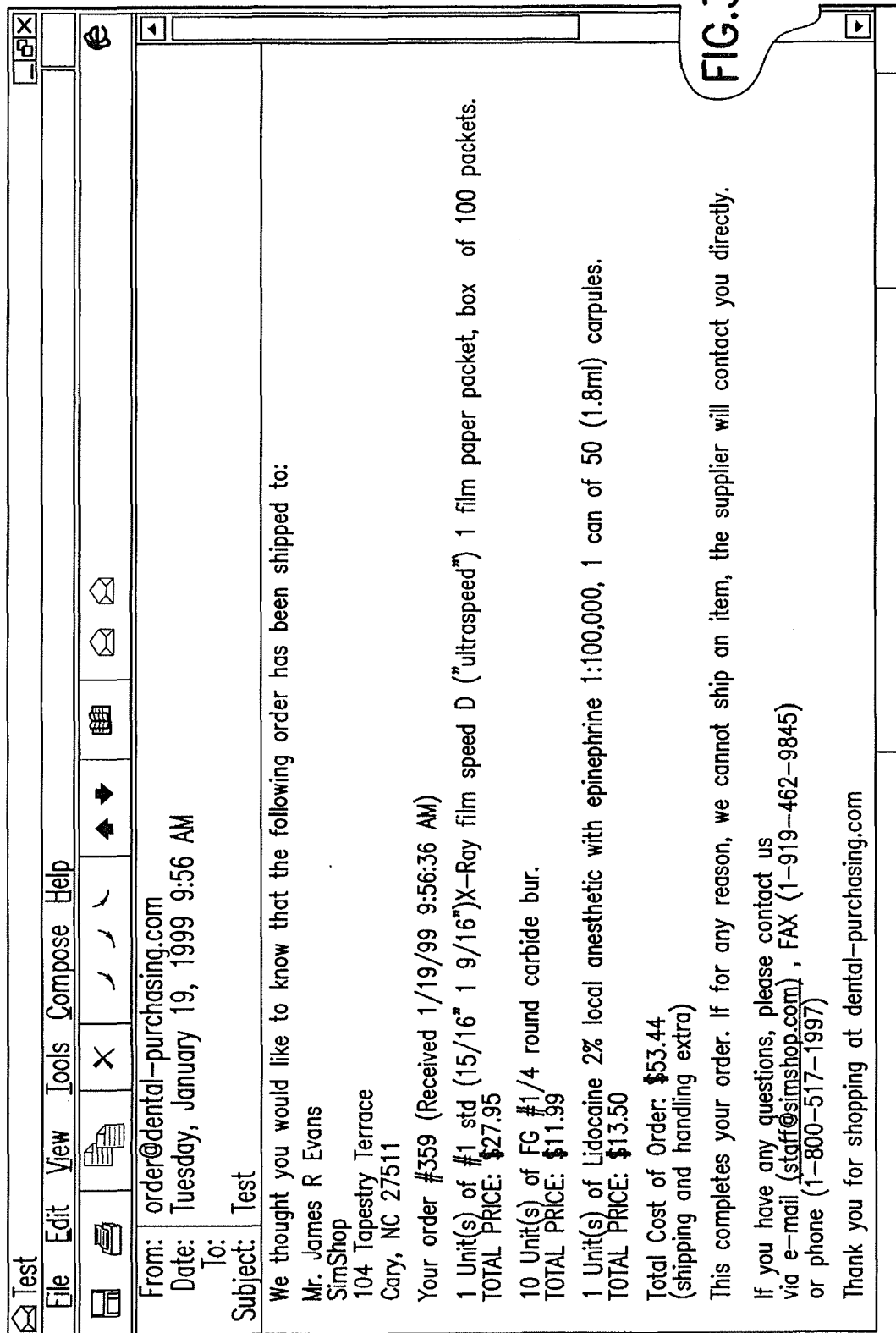
Order: #DP0359
Mr. James R Evans
SimShop
104 Tapestry Terrace
Cary, NC 27511

Thank you for your order. Your order has been assigned order number DP0359. Please refer to this order number if you have any questions about your order.

NOTE: Please allow about 1 week for delivery of the items on your order. For your convenience your order is displayed below. For your records you may want to print this confirmation form which contains the products you ordered as well as your assigned order number.

Home
Shop
Order History
Templates
ShoppingCart
View/Edit
Recalculate
Place Order
Save As Template
Empty
Edit Account
Help

Vendor	Vendor Code	Manufact.	Brand	Description	Unit Price	Quan.	Ext. Price	Substitution
Arnold Dental Supply	AD111-7655	Kodak	Ultraspeed DF-56	#1 std (15/16" x 1 9/16") X-Ray film speed D ("ultraspeed") 1 film paper packet, box of 100 packets	\$27.95	1	\$27.95	Not Allowed
Arnold Dental Supply	17839	S.S.White	<NOT SPECIFIED>	FC #1/4 round cabide bur	\$1.20	10	\$11.99	Not Allowed
Carolina Dental Supply	CD856-8483	Kodak	Lidocaine	Lidocaine 2% local anesthetic with epinephrine 1:100,000, 1 can of 50 (1.8 ml) carpules	\$13.50	1	\$13.50	Not Allowed



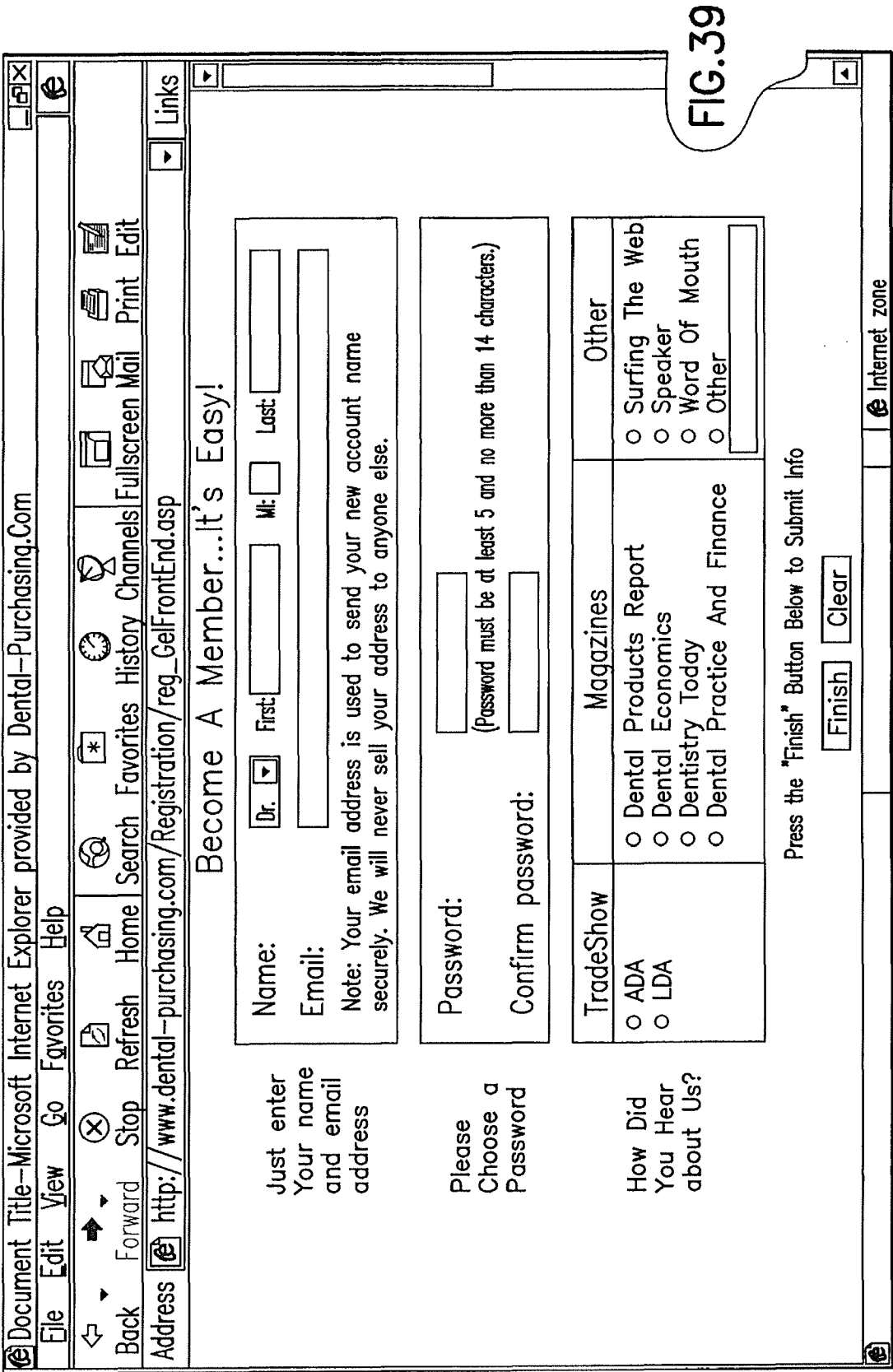


FIG. 39

Vendor Request Form—Microsoft Internet Explorer provided by Dental—Purchasing.Com

File Edit View Go Favorites Help

Back Forward Stop Refresh Home Search Favorites History Channels Fullscreen Mail Print Edit

Address http://www.dental-purchasing.com/vendor_services/vendor_response.asp Links

Vendor Registration Form

Thank you for your interest in Dental—Purchasing.Com! Please take a moment to fill out our registration form. Click the button and we'll send you an email with your new userid right away. You will also receive immediate access to Dental—Purchasing.com, however, you won't be able to see supplier information until you login.

Name:*	<input type="text"/>	First: <input type="text"/>	Mi: <input type="text"/>	Last: <input type="text"/>
Email:*	<input type="text"/>			
Company Name:*	<input type="text"/>			
Address:*	<input type="text"/>			
Address 2:	<input type="text"/>			
City, State, Zip:*	<input type="text"/>	State: <input type="text"/>	Zip Code: <input type="text"/>	
Phone:*	Area: <input type="text"/>	Phone: <input type="text"/>	Ext.: <input type="text"/>	
Fax:	Area: <input type="text"/>	Fax: <input type="text"/>	Ext.: <input type="text"/>	
Password:*	<input type="text"/>			
Confirm password:*	<input type="text"/>			

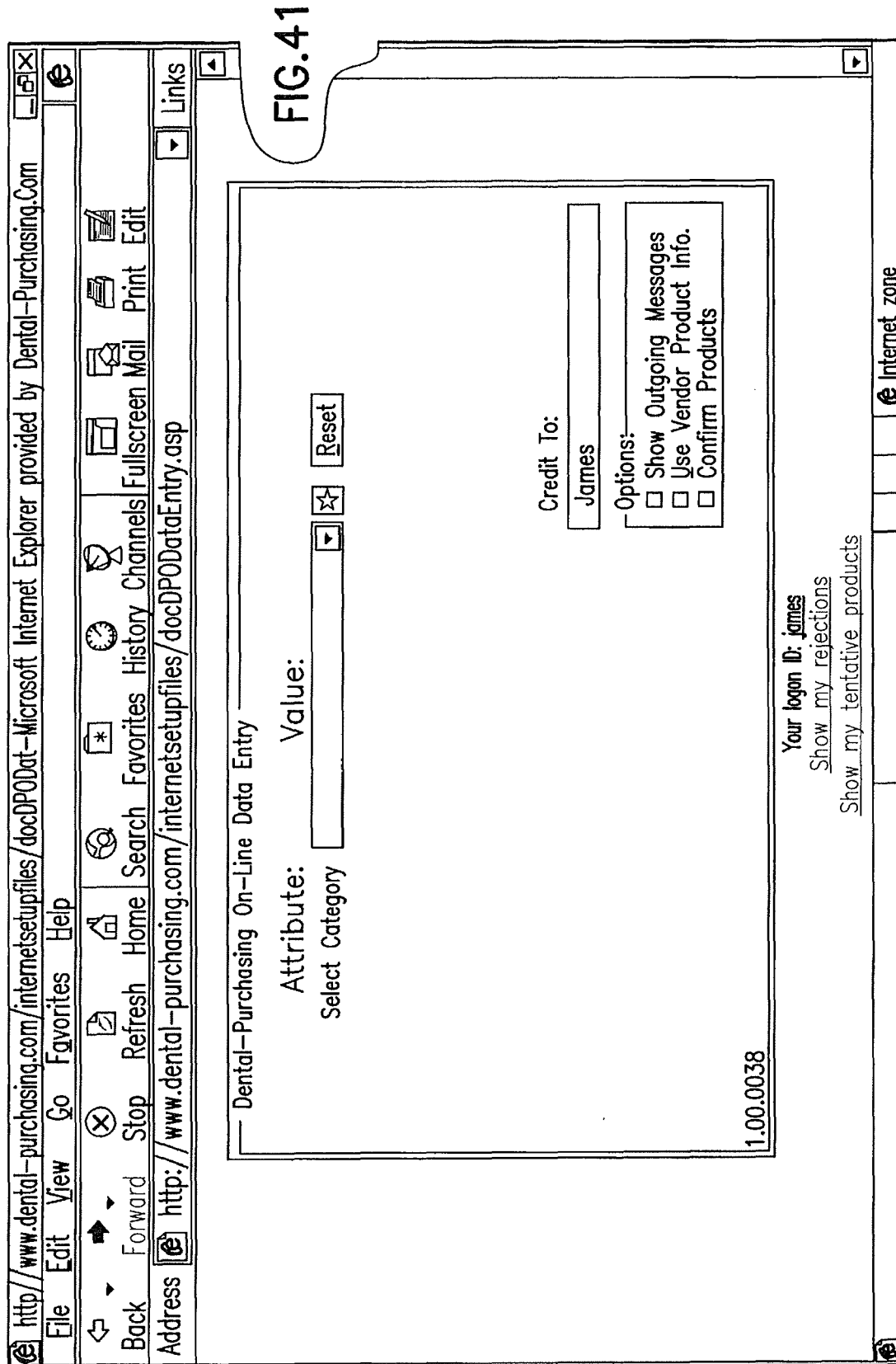
(Password must be at least 5 and no more than 14 characters.)

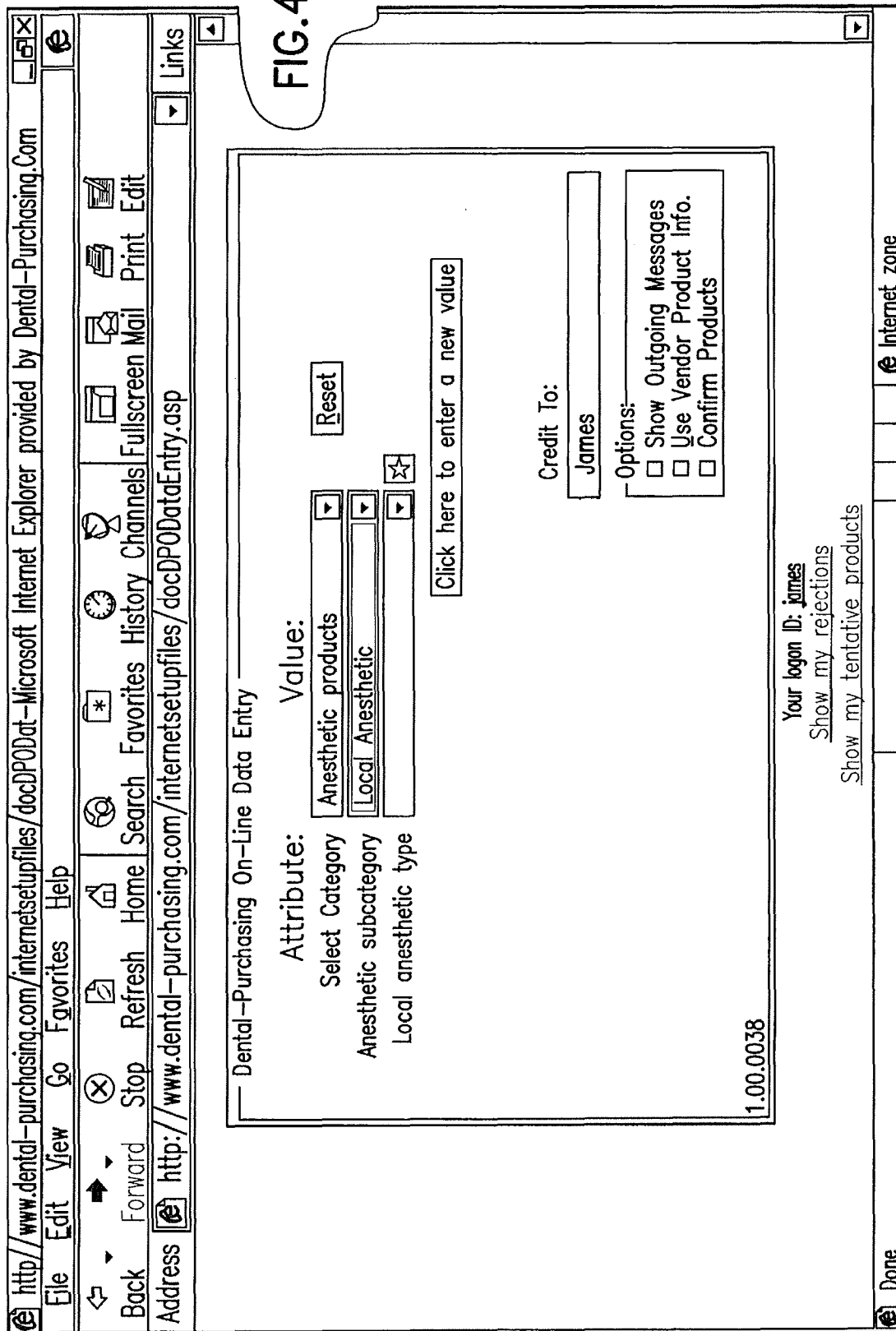
VISIT DENTAL—PURCHASING.COM

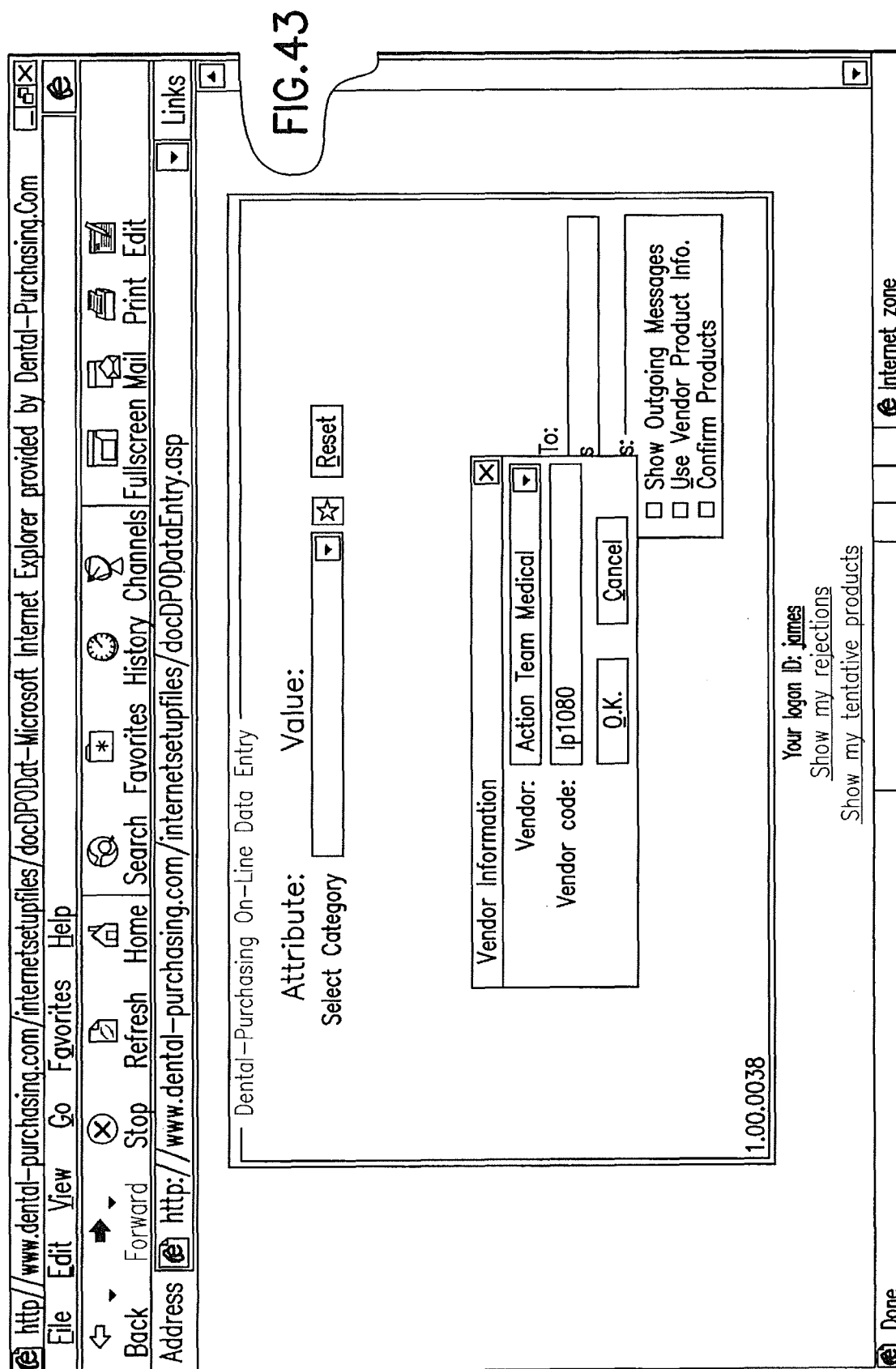
If you have any questions, please call us at 1-800-517-1997

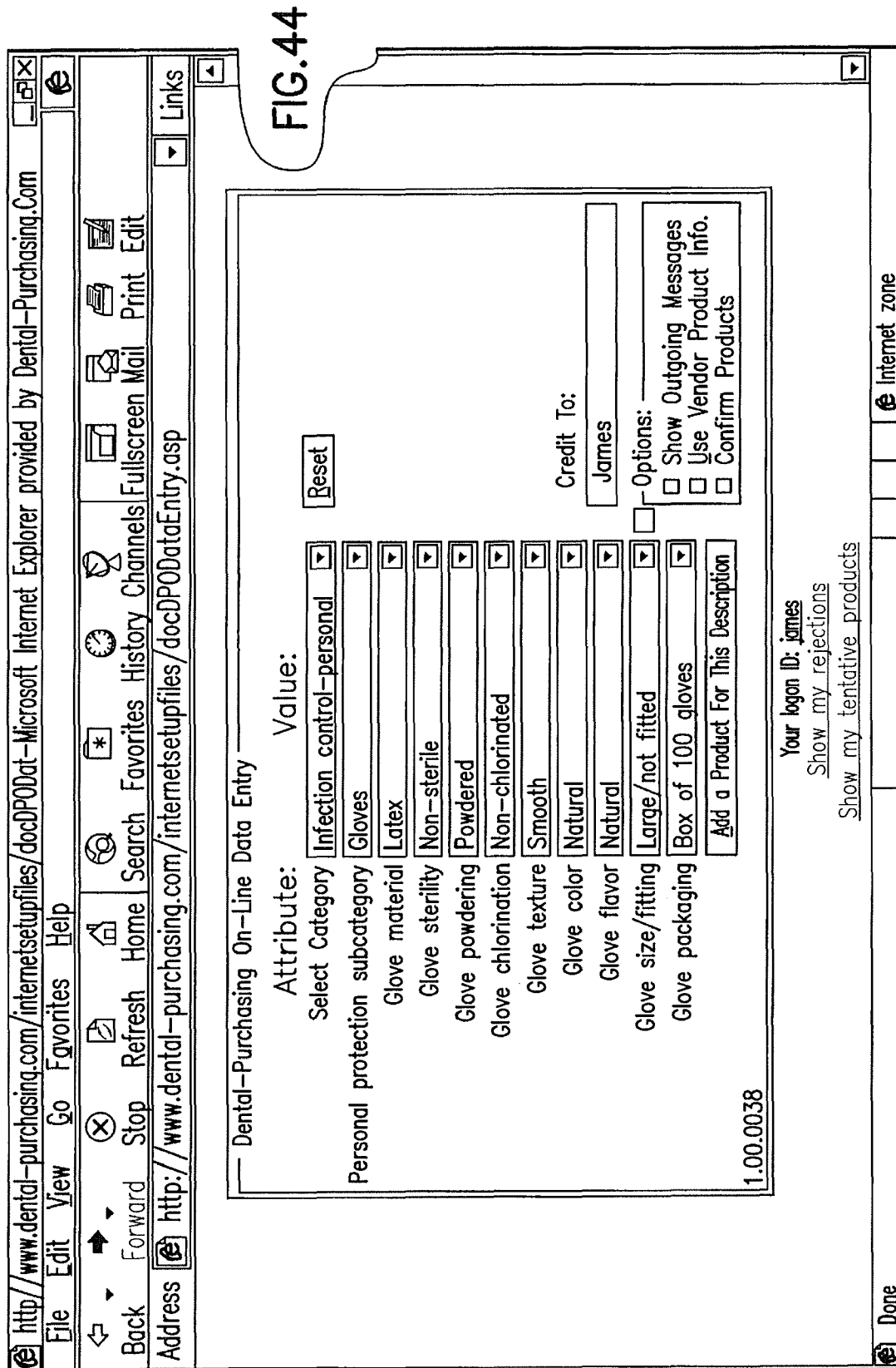
Internet zone

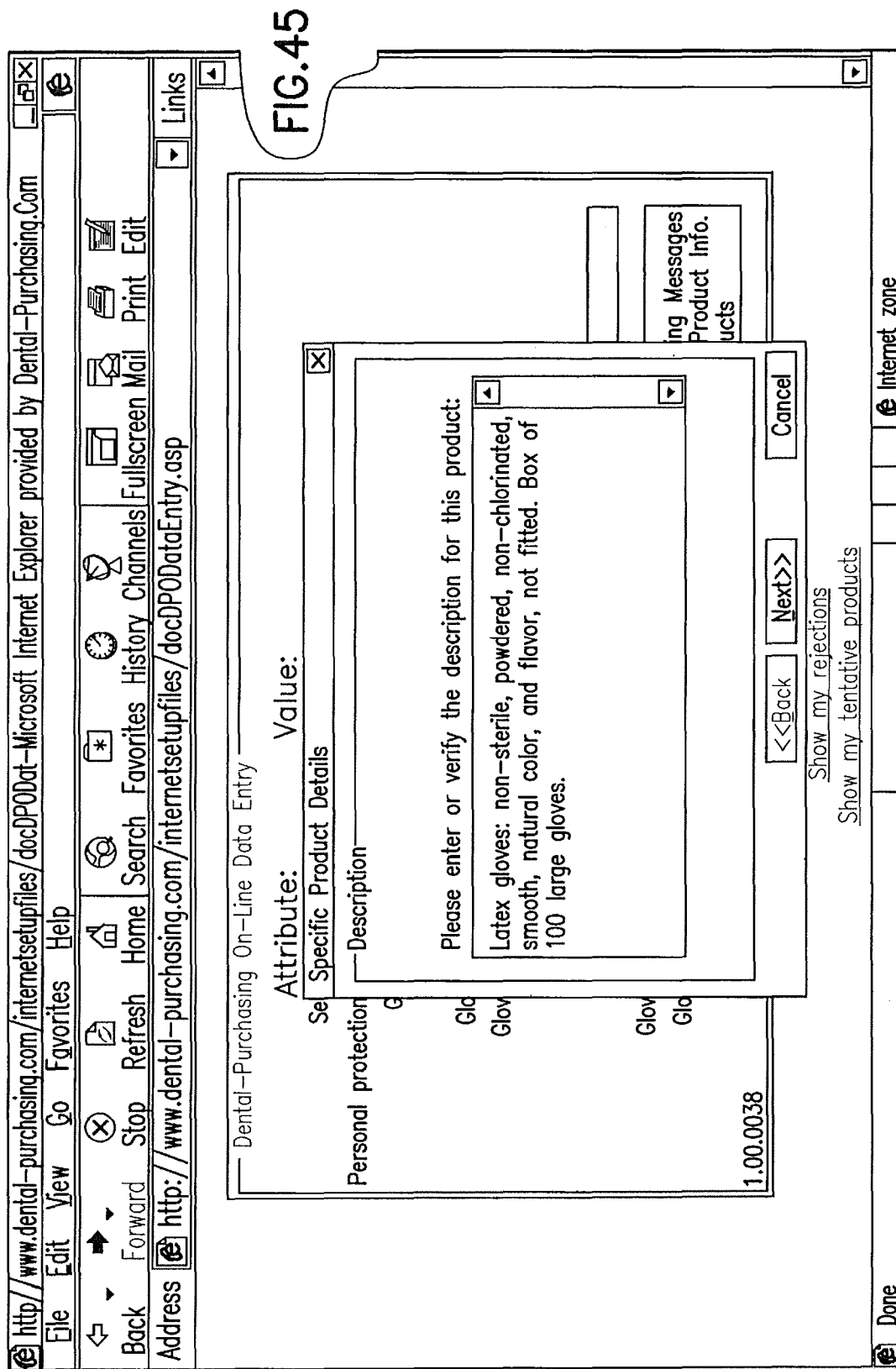
FIG. 40

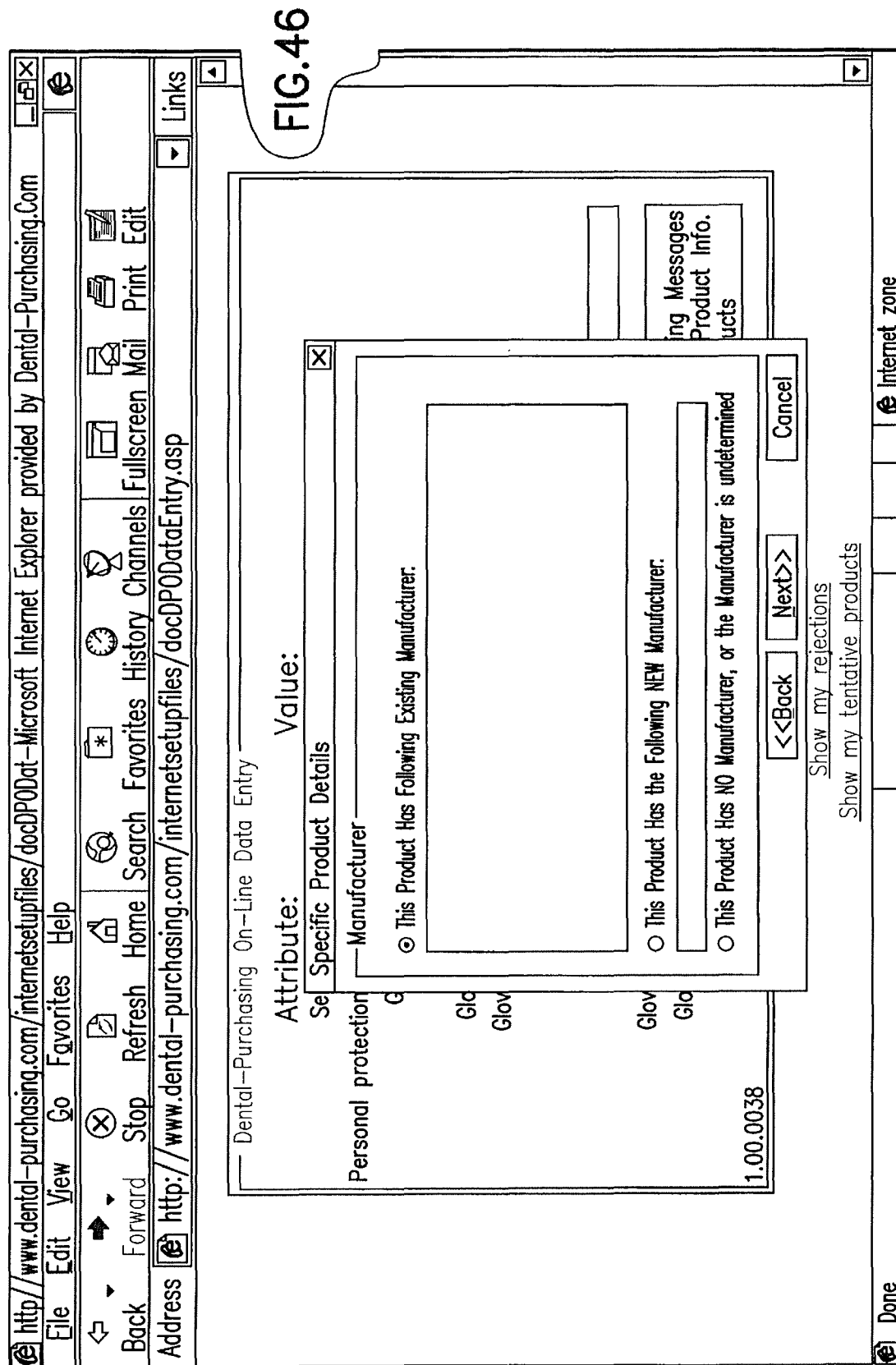


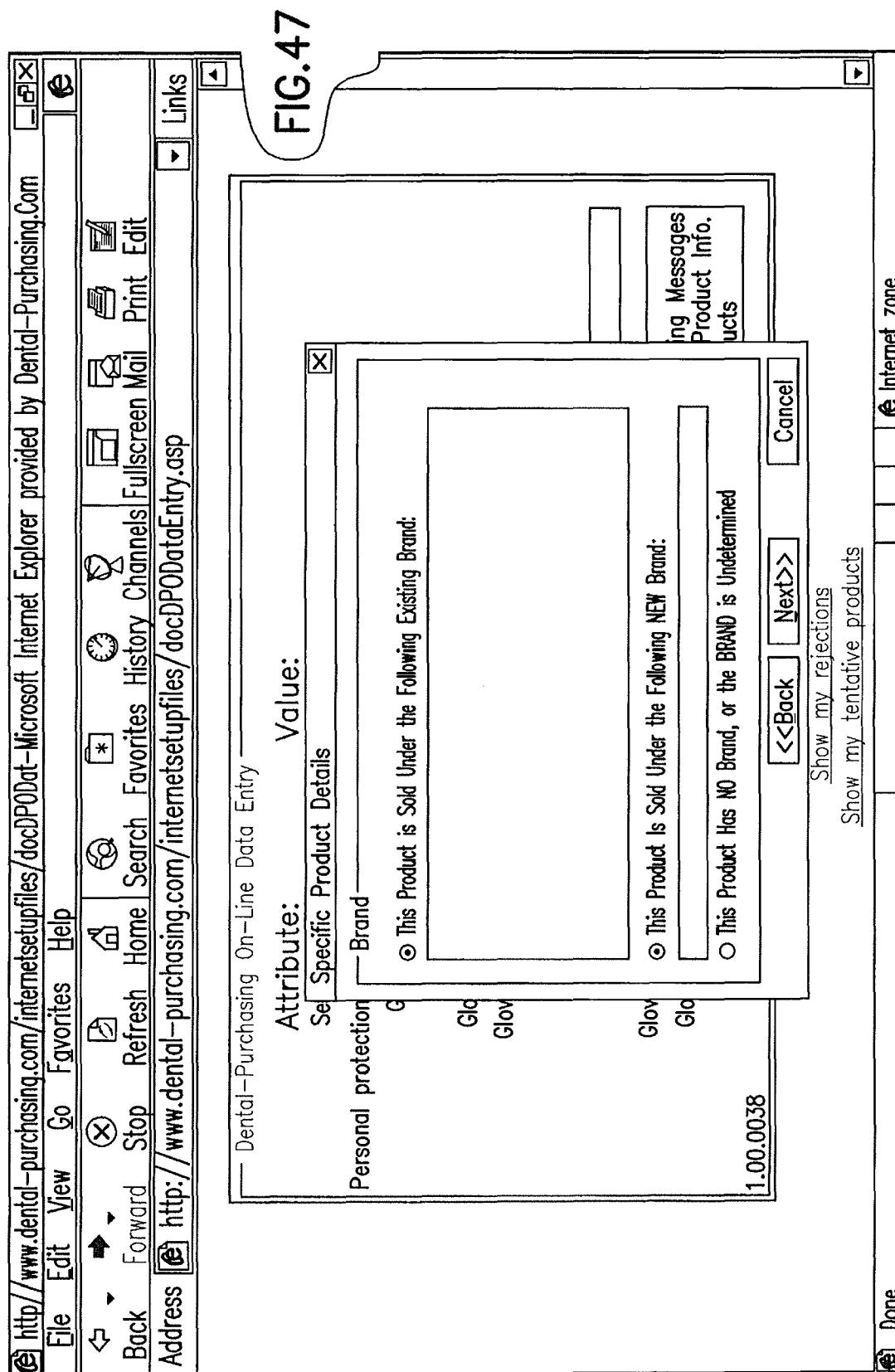


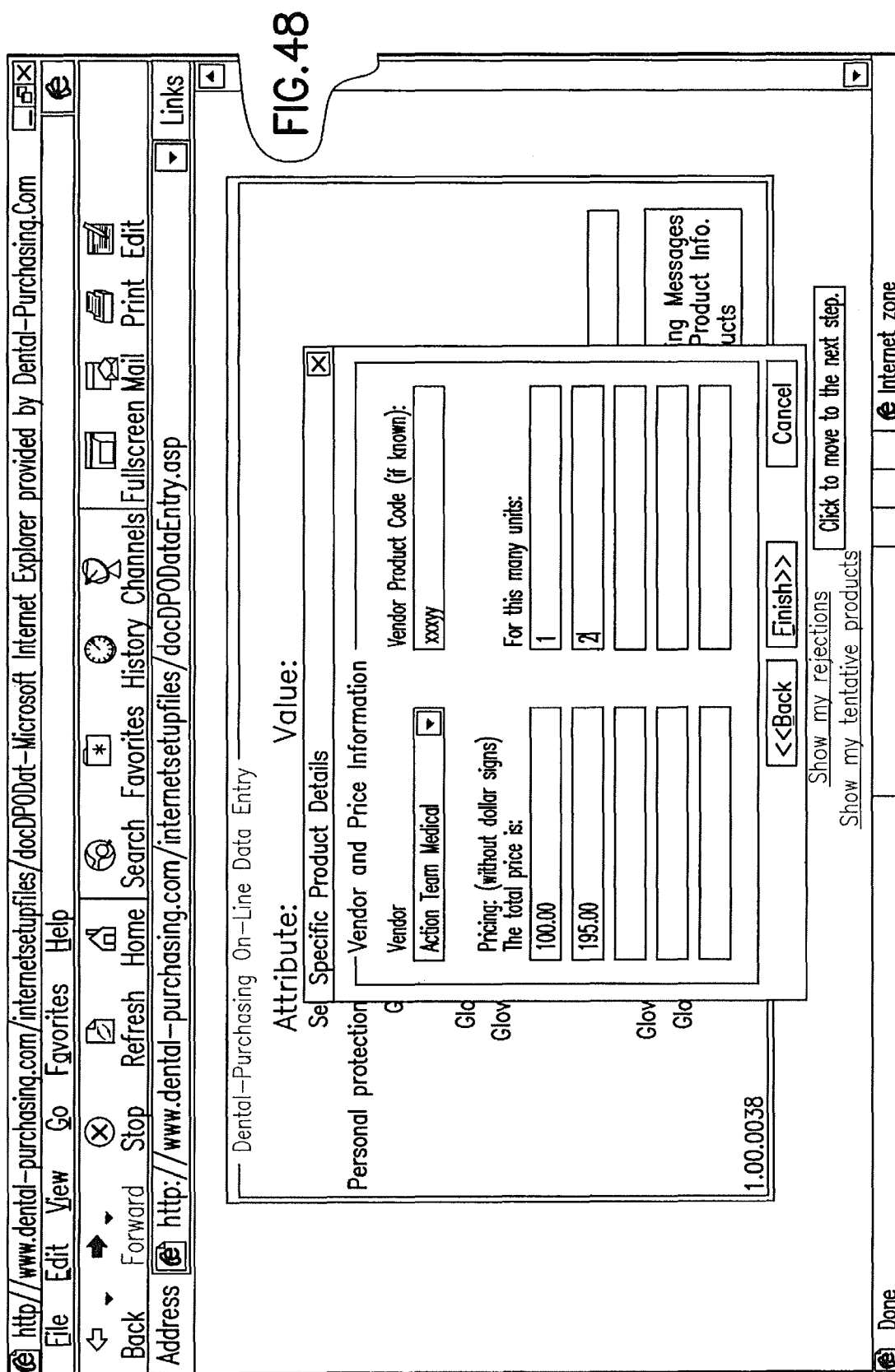












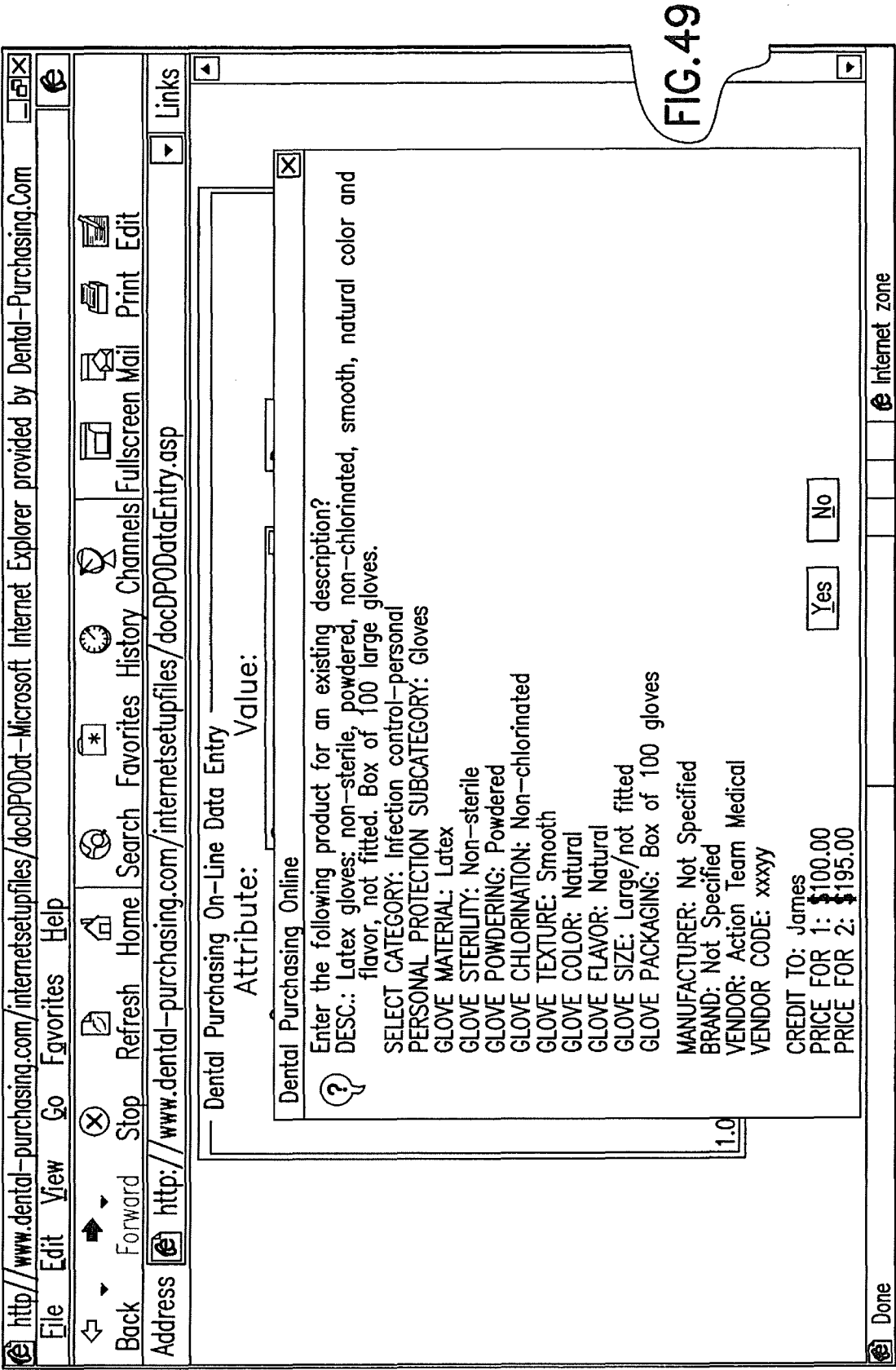


FIG. 50

Data Entry Confirmation—Microsoft Internet Explorer provided by Dental—Purchasing.Com

File Edit View Go Favorites Help

Back Forward Stop Refresh Home Search Favorites History Channels Fullscreen Mail Print Edit

Address <http://www.dental-purchasing.com/ConfirmProducts/Start.asp> Links

Data Entry Confirmation

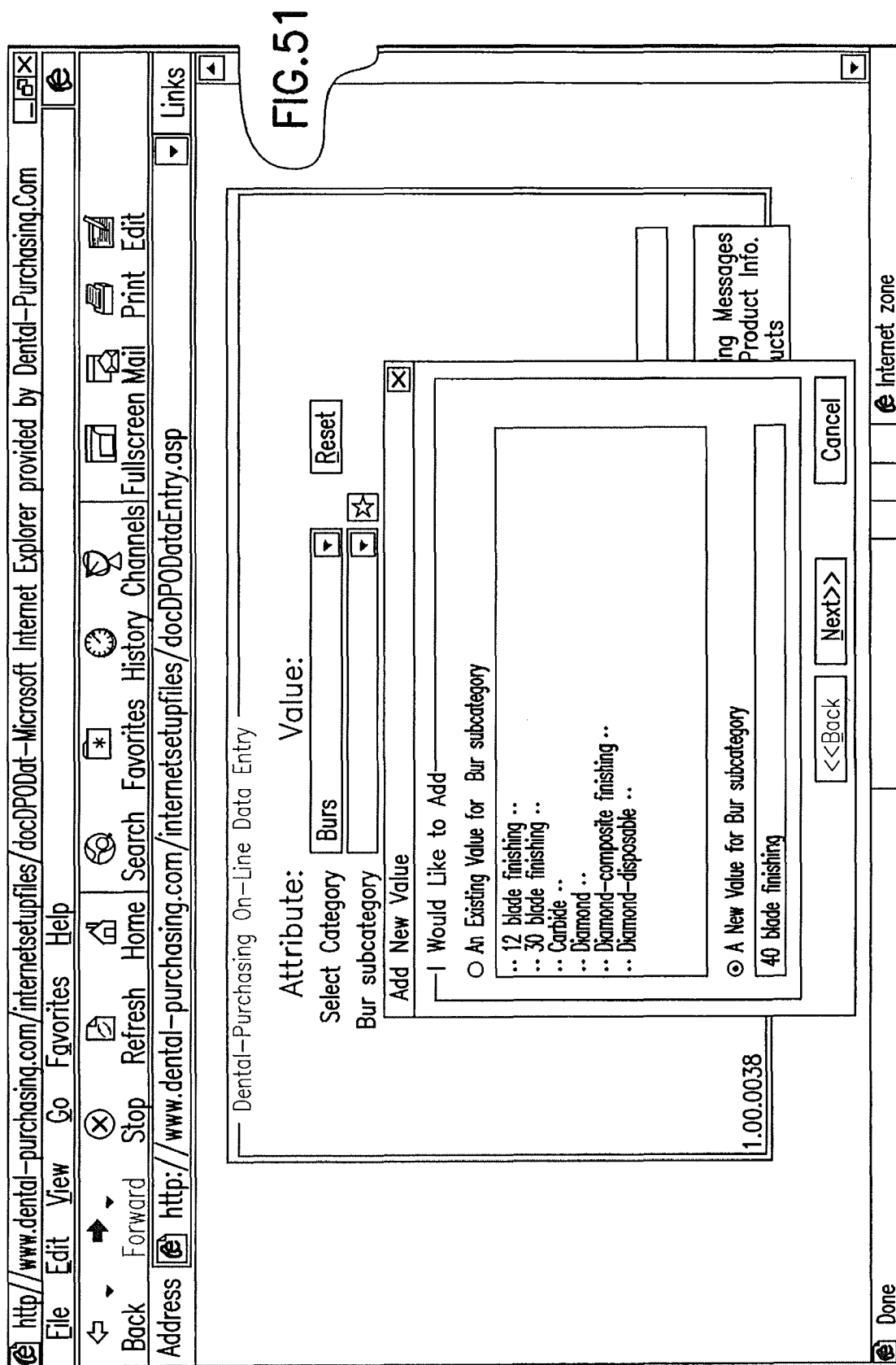
There are 220 products in the tentative product table.

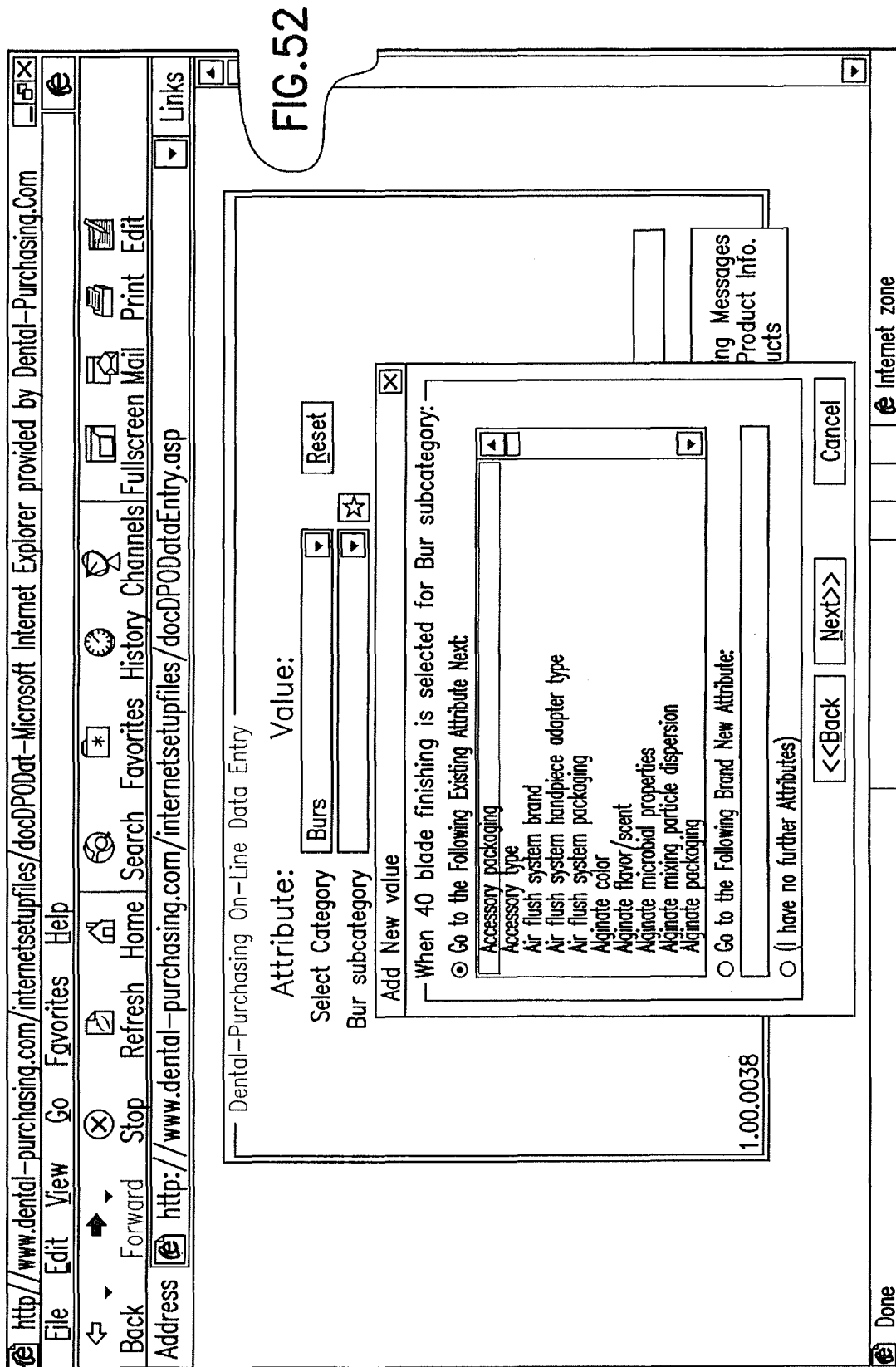
James Load Table

Description	Decision
<p>Tentative Product ID: 37111</p> <p>Latex gloves: non-sterile, powdered, smooth, natural color and favor, not fitted. Box of 100 large gloves.</p> <p>Select category:</p> <p>Personal protection subcategory:</p> <p>Glove material:</p> <p>Glove sterility:</p> <p>Glove powdering:</p> <p>Glove chlorination:</p> <p>Glove texture:</p> <p>Glove color:</p> <p>Glove flavor:</p> <p>Glove size/fitting:</p> <p>Glove packaging:</p> <p>Manufacturer:</p> <p>Brand:</p> <p>Vendor:</p> <p>Vendor Product Code:</p> <p>Price for qty 1:</p> <p>Price for qty 2:</p> <p>Data entry person</p>	<p> <input type="radio"/> Reject <input checked="" type="radio"/> Leave </p> <p> Infection control—personal Gloves Latex Non-sterile Powdered Non-chlorinated Smooth Natural Natural Large/not fitted Box of 100 gloves * * Action Team Medical xxxxy \$100.00 \$195.00 James </p>

Submit Changes

Internet zone



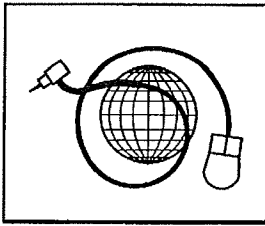


DPOne Report

Data Entry [Vendor Products]: 11/01/1998 – 01/19/1999

<u>User ID</u>	<u>Number Of Vendor Products Entered</u>	<u>Amount</u>
LCE0	40	\$0.00
LDD0	184	\$46.00

FIG.53



DENTAL-PURCHASING.COM
 1 COPLEY PARKWAY SUITE 106
 MORRISVILLE, N.C. 27560
 TEL.(919)462-9844
 FAX(919)462-9845

INVOICE NO
38
INVOICE DATE
1/11/99

PAGE 1

TERMS
DUE ON RECEIPT

TEL.(800) 562-6645 FAX (425) 712-8677

REF No.	ORDER DATE	DESCRIPTION	QTY	UNIT PRICE	EXTENDED PRICE	COMMISSION DUE
334	11/29/98	AD547-7896	2	28.50	57.00	3.42
334	11/29/98	AD111-4404	4	38.95	155.80	9.35
334	11/29/98	AD222-4179	2	30.95	61.90	3.71
334	11/29/98	385265	100	0.94	93.50	5.61
341	12/3/98	AD135-7651	1	21.50	21.50	1.29
341	12/3/98	AD777-0374	6	20.50	123.00	7.38
341	12/3/98	AD333-6628	1	22.95	22.95	1.38
343	12/8/98	AD600-3599	24	11.75	282.00	16.92
345	12/12/98	ADRDC27HF	2	6.35	12.70	0.76
345	12/12/98	ADRDC561	2	7.45	14.90	0.89
345	12/12/98	382523	5	4.70	23.50	1.41
346	12/15/98	AD856-0233	10	12.79	127.90	7.67
346	12/15/98	AD111-2876	5	28.95	144.75	8.69
350	12/16/98	AD777-4266	1	19.45	19.45	1.17
350	12/16/98	14733	20	1.20	23.98	1.44
350	12/16/98	AD378-9199	20	6.95	139.00	8.34
350	12/16/98	382510	10	4.70	47.00	2.82
350	12/16/98	382524	10	4.70	47.00	2.82
350	12/16/98	AD0402CA	1	14.95	14.95	0.90
352	12/18/98	AD856-3210	10	12.79	127.90	7.67
352	12/18/98	AD312-6828	10	4.85	48.50	2.91
COMMENTS:					SUB-TOTAL:	\$96.55
					OTHER:	0.00
					PLEASE PAY:	96.55

FIG.54

<DUPLICATE COPY>

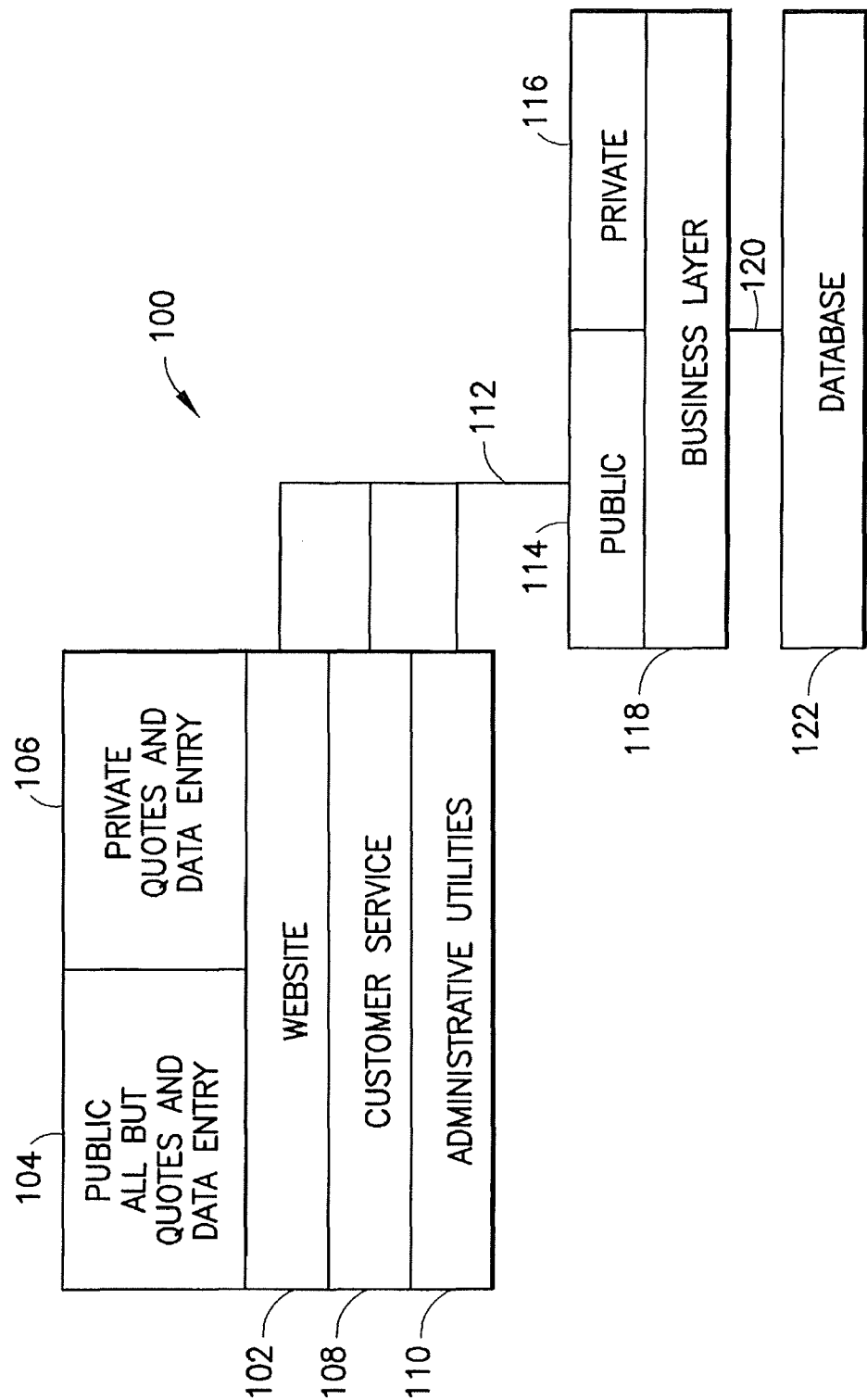


FIG.55

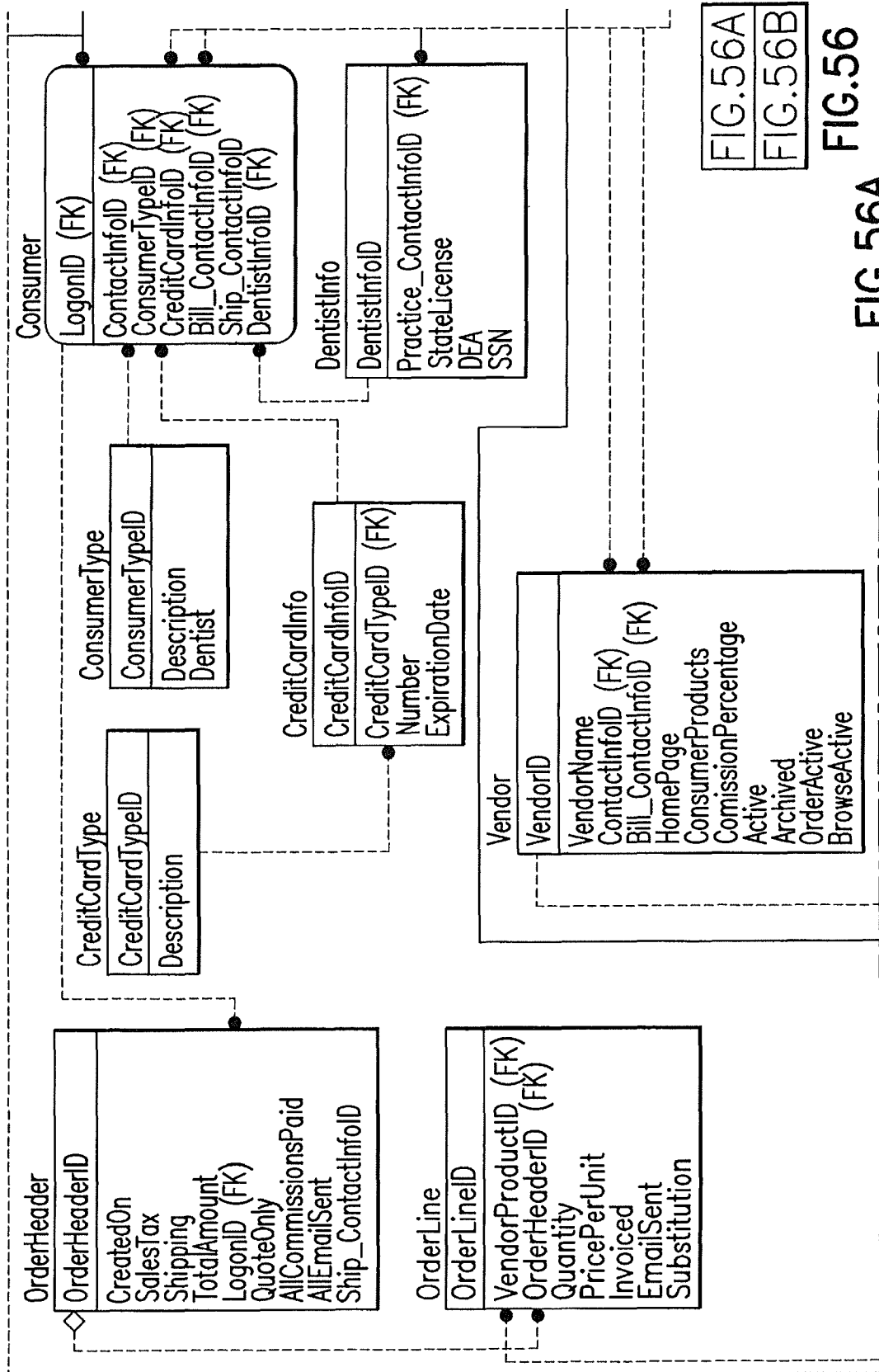


FIG. 56A
FIG. 56B

FIG. 56
FIG. 56A

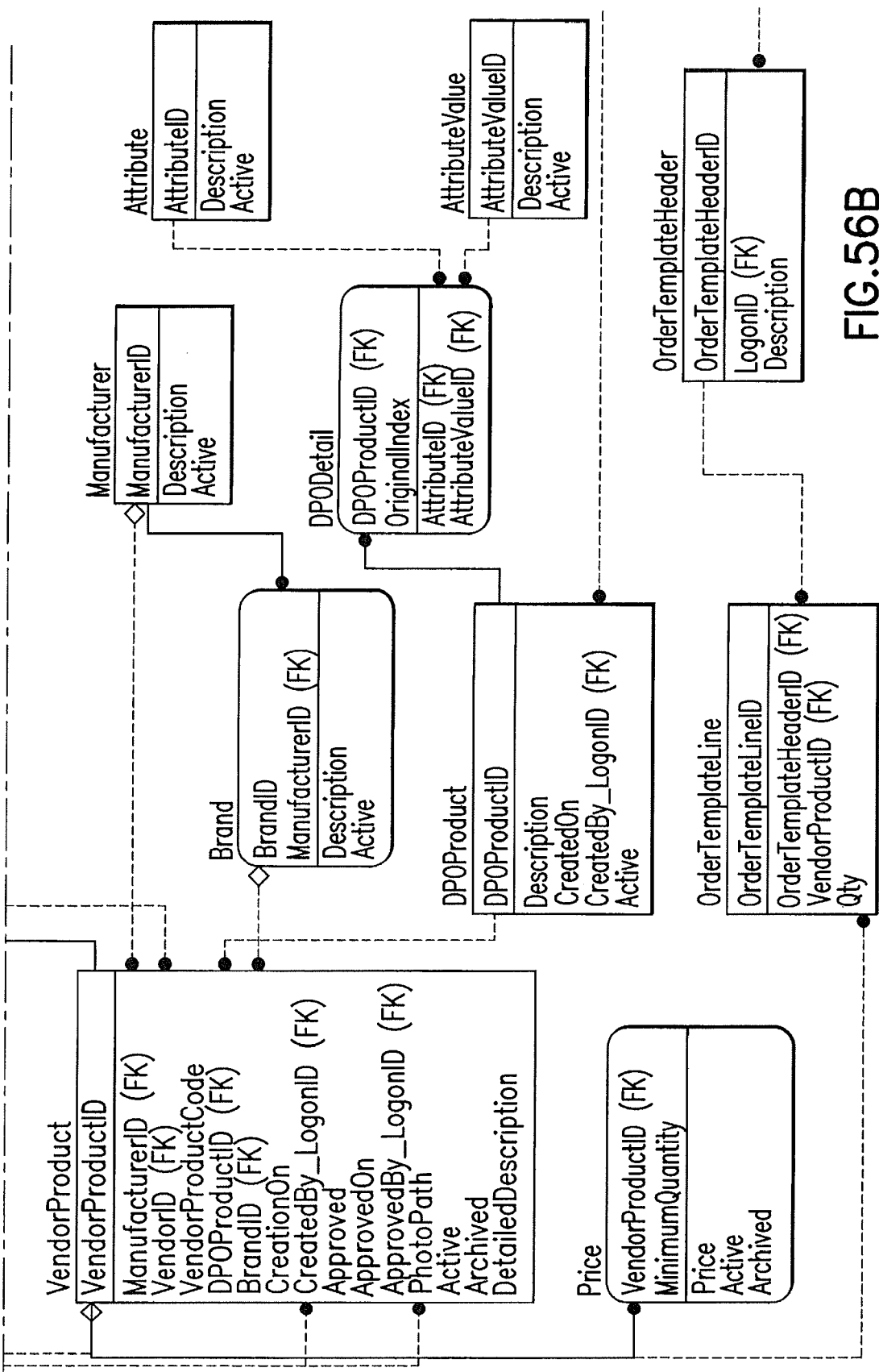


FIG. 56B

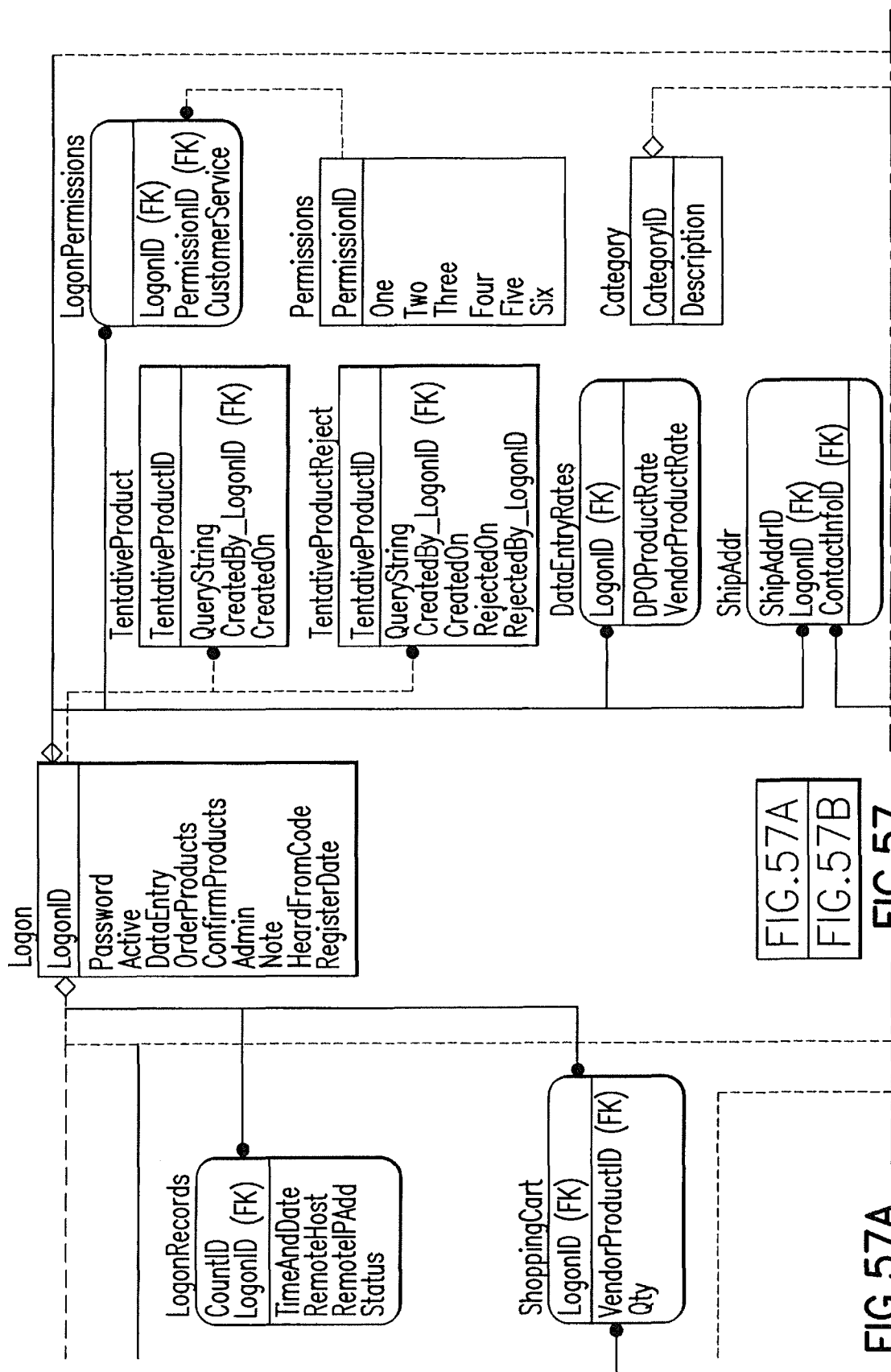


FIG. 57A
FIG. 57B

FIG. 57

FIG. 57A

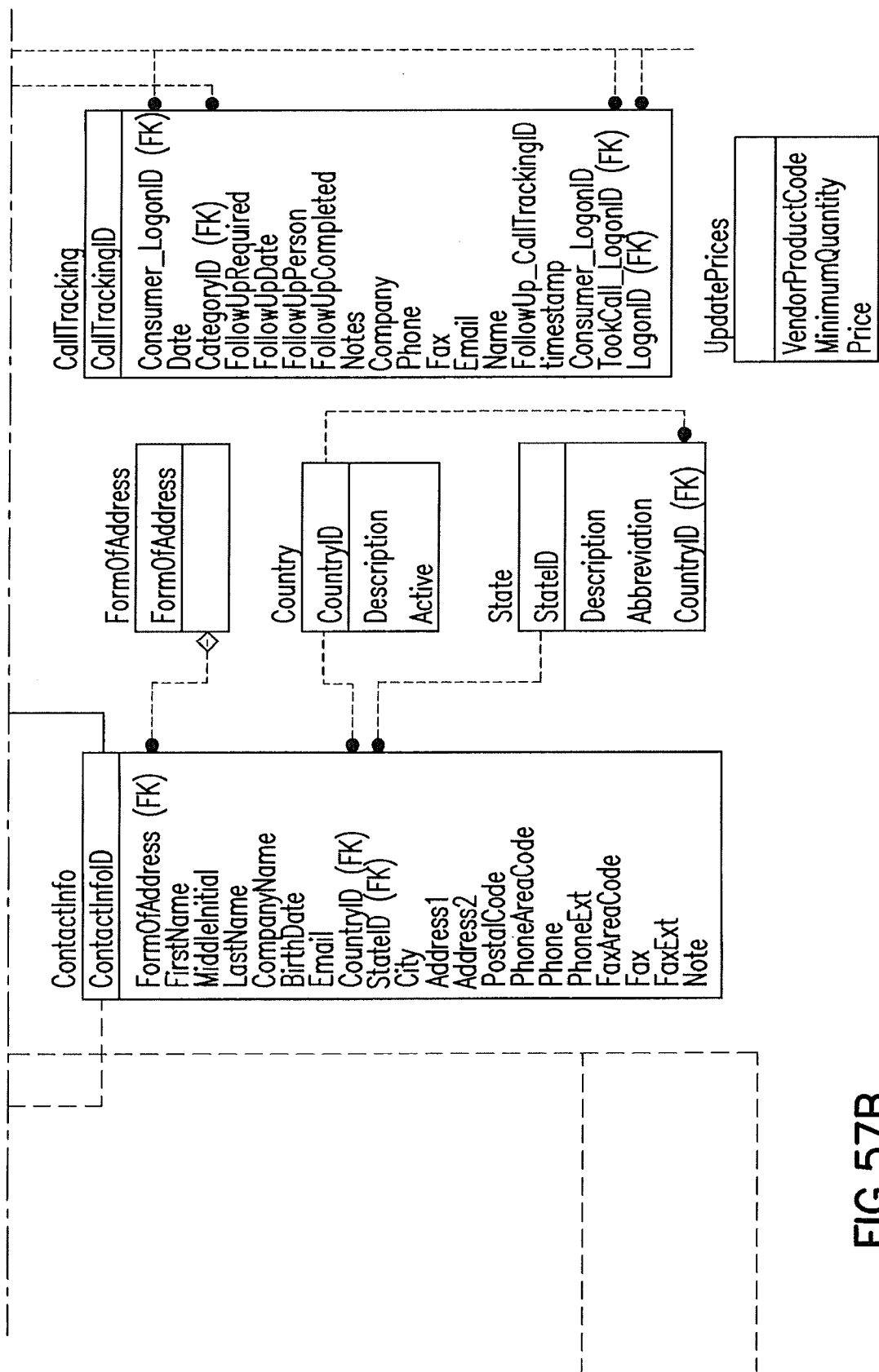
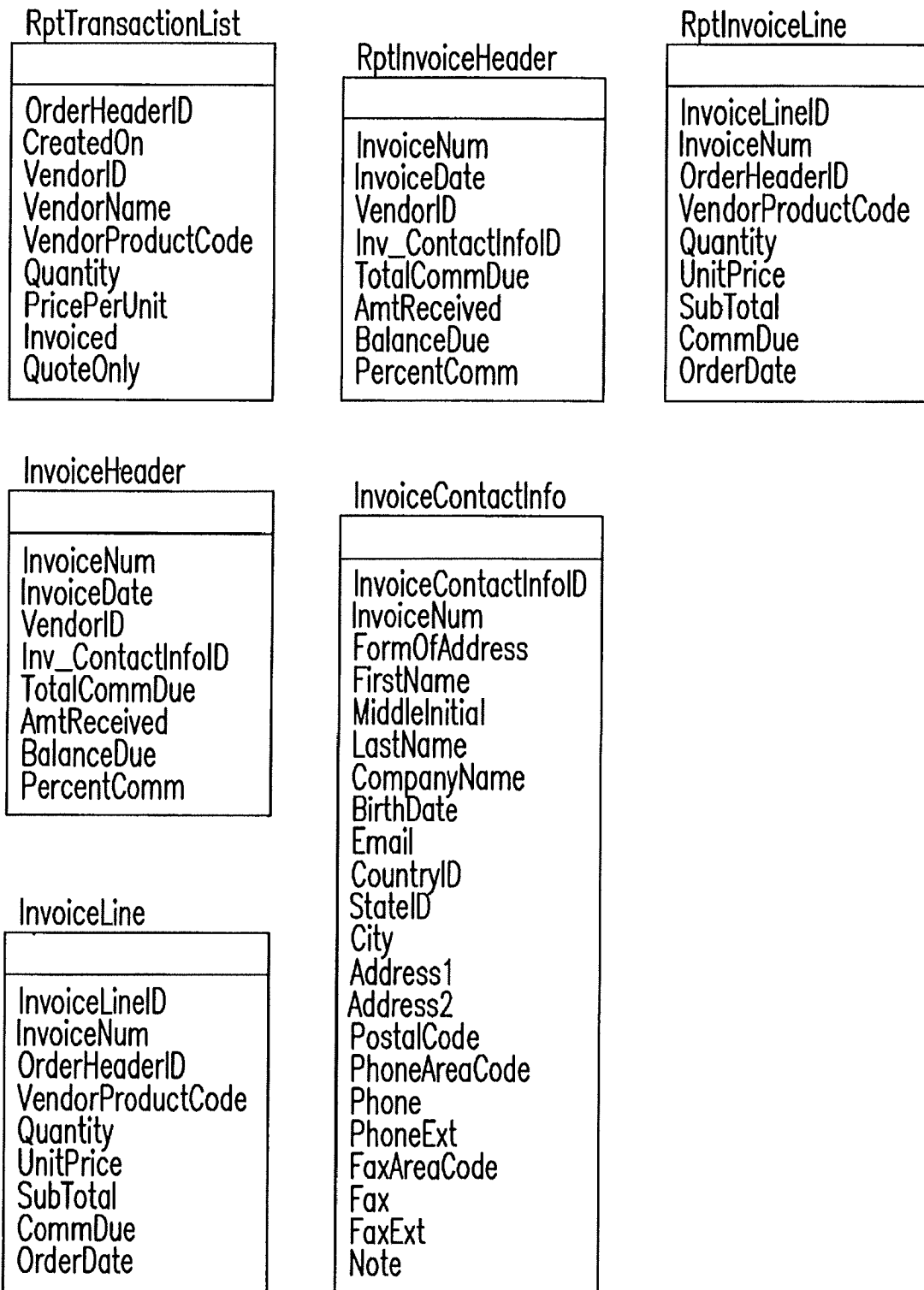
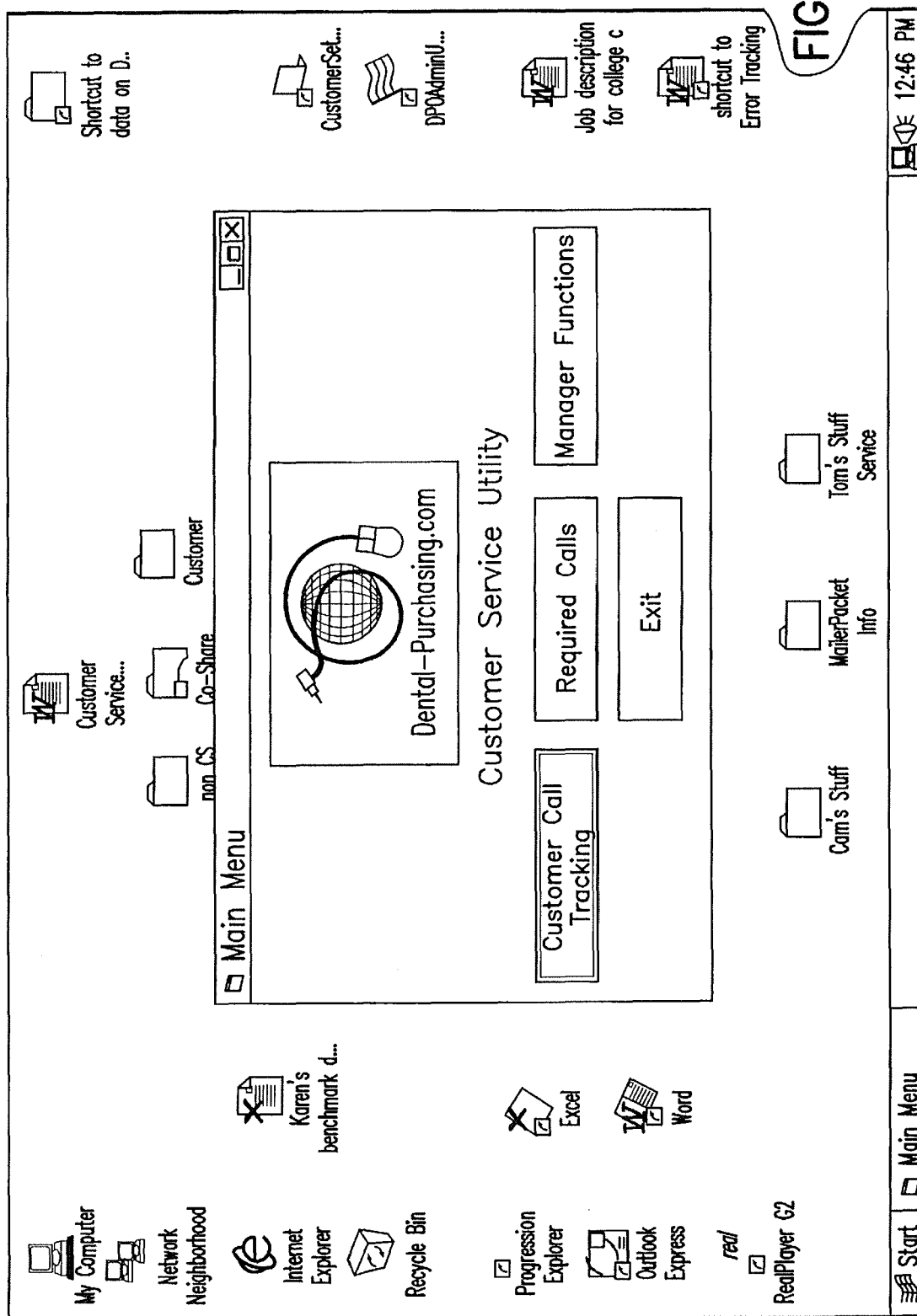


FIG. 57B





Customer Call Tracking

Administrative | **Billing** | **Shipping**

Logon ID:
Password:
Name:
Form of Address:
Birth Date:
Email:
Company:
Phone:
Fax:
Address:
City:
State:
Postal Code:
Country:
Heard From:
Notes:

Shortcut to data on D.. CustomerSet... DPOAdminU... Job description for college c shortcut to Error Tracking

My Computer Network Neighborhood Internet Explorer Recycle Bin Progression Explorer Outlook Express RealPlayer G2

Start Calls Customer Call Tracking 1:21 PM

FIG. 60

Customer Call Tracking

Administrative Billing Shipping

Name: <NOT SPECIFIED> <NOT SPECIFIED>

Form of Address: <NOT SPECIFIED>

Birth Date: 01/01/00

Email: <NOT SPECIFIED>

Company: <NOT SPECIFIED>

Phone: 999 9999999

Fax: <NOT SPECIFIED>

Address: <NOT SPECIFIED>

City: <NOT SPECIFIED>

State: AA(Armed Forces Americas)

Postal Code: 00000000

Country: United States

Notes:

New Call View Calls Credit Card Info Dentist Info Edit Save Close

Shortcut to data on D.. CustomerSet... DPOAdminU... Job description for college c shortcut to Error Tracking

My Computer Network Neighborhood Recycle Bin Progression Explorer Outlook Express RealPlayer G2

Start Customer Call Tracking 2:541 PM

FIG. 61

Customer Call Tracking

Administrative Billing Shipping

<<Previous 1 of 1 Next>>

Name <NOT SPECIFIED> <NOT SPECIFIED>

Form of Address <NOT SPECIFIED>

Birth Date 01/01/00

Email <NOT SPECIFIED>

Company <NOT SPECIFIED>

Phone 999 9999999

Fax

Address <NOT SPECIFIED>

City <NOT SPECIFIED>

State AA(Armed Forces Americas)

Postal Code 000000000

Country United States

Notes

New Call View Calls Credit Card Info Dentist Info Edit Save Close

Shortcut to data on D.. CustomerSet... DPQAdminU... Job description for college c shortcut to Error Tracking

My Computer Network Neighborhood Internet Explorer Recycle Bin Progression Explorer Outlook Express real RealPlayer G2

Start Customer Call Tracking 2:55 PM

FIG. 62

Customer Call Tracking

Administrative Billing Shipping

Logon ID: Password: Search

Call Details

Who Took The Call:

Logon ID: Date: Name: Company: Phone: ext: Fax: ext: Email:

Call Description:

Followup Info: ☐ Required Date Person needed

Add Followup Call(s)

Adding new call Save Cancel

Heard From Notes

Save Close

Shortcut to data on D... CustomerSet... DPOAdminU... Job description for college c shortcut to Error Tracking

My Computer Network Neighborhood Internet Explorer Recycle Bin Progression Explorer Outlook Express real/ RealPlayer G2

Start Calls Microsoft Word Customer Call Tracking 1:24 PM

FIG. 63

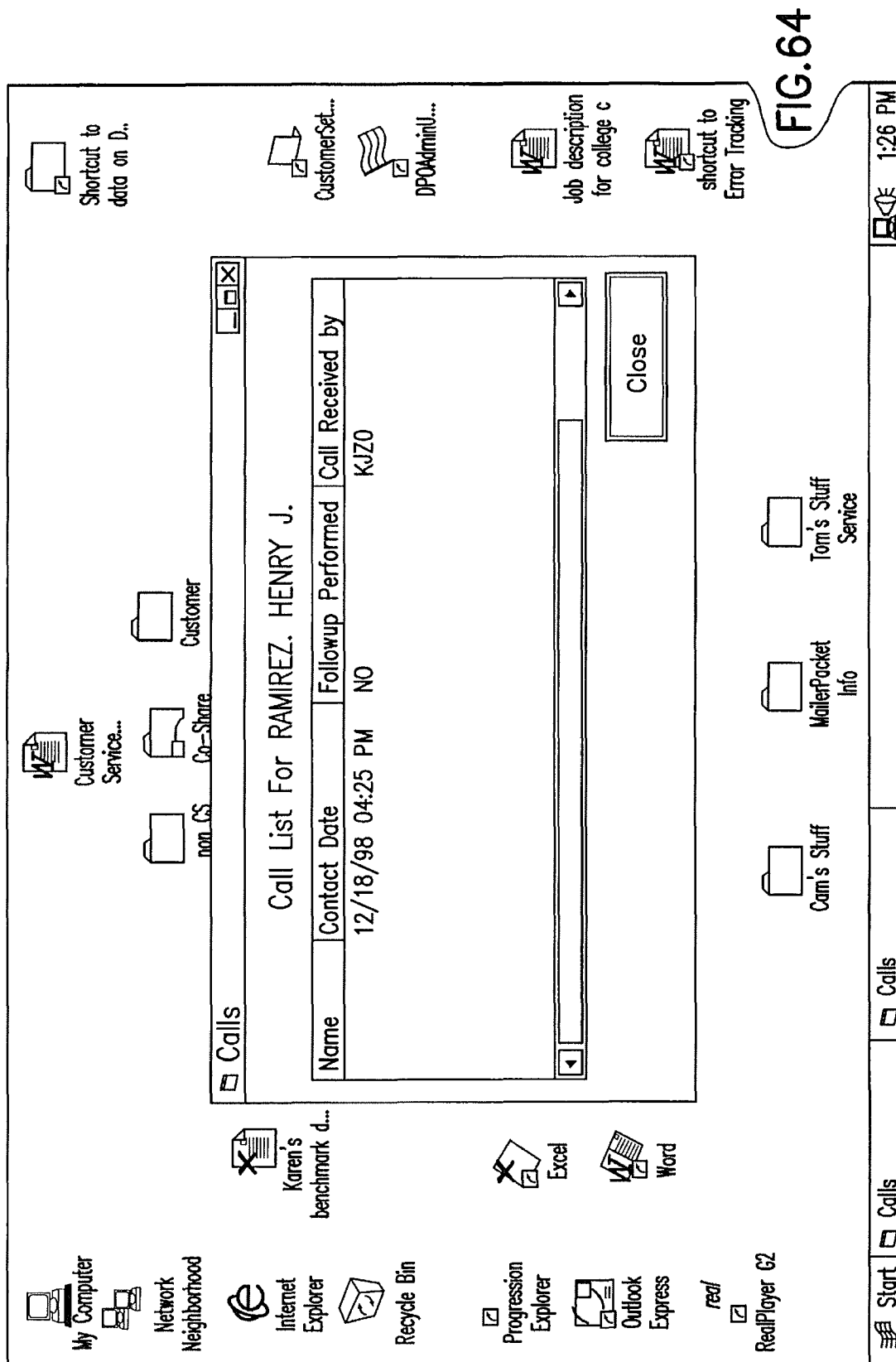


FIG. 64

Customer Call Tracking

Administrative Billing Shipping

Logon ID Search

Password Search

Name J Search

Form of Address Dr.

Birth Date 01/01/00

Email

Company

Phone

Fax

Address

City

State All (Armed Forces Americas)

Postal Code Search

Country United States

Heard From DENTISTRY TODAY

Notes

Credit Card Information

Card Type VISA

Card Number 0000000000000000

Expiration Date 1/1/98

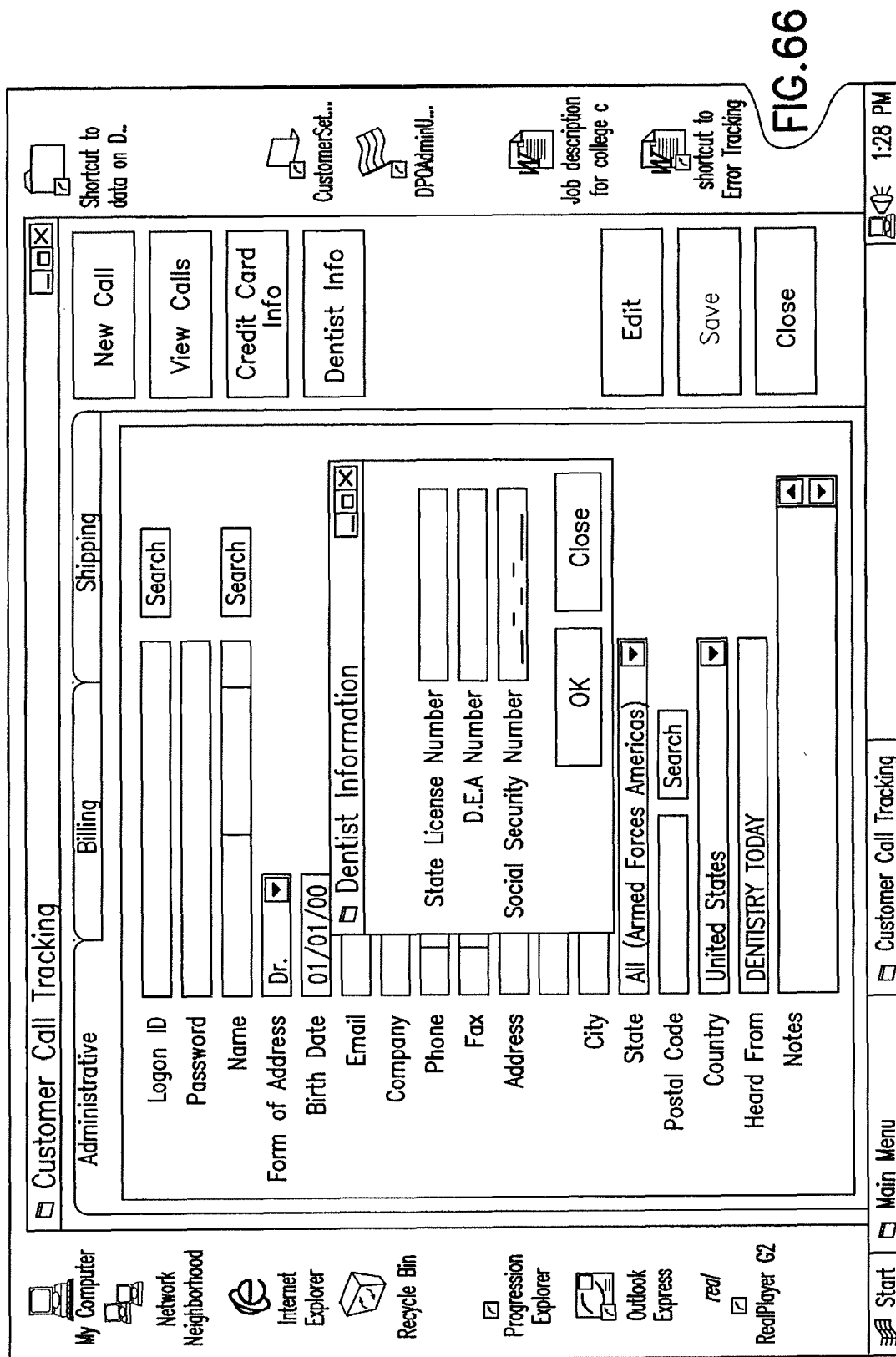
OK Close

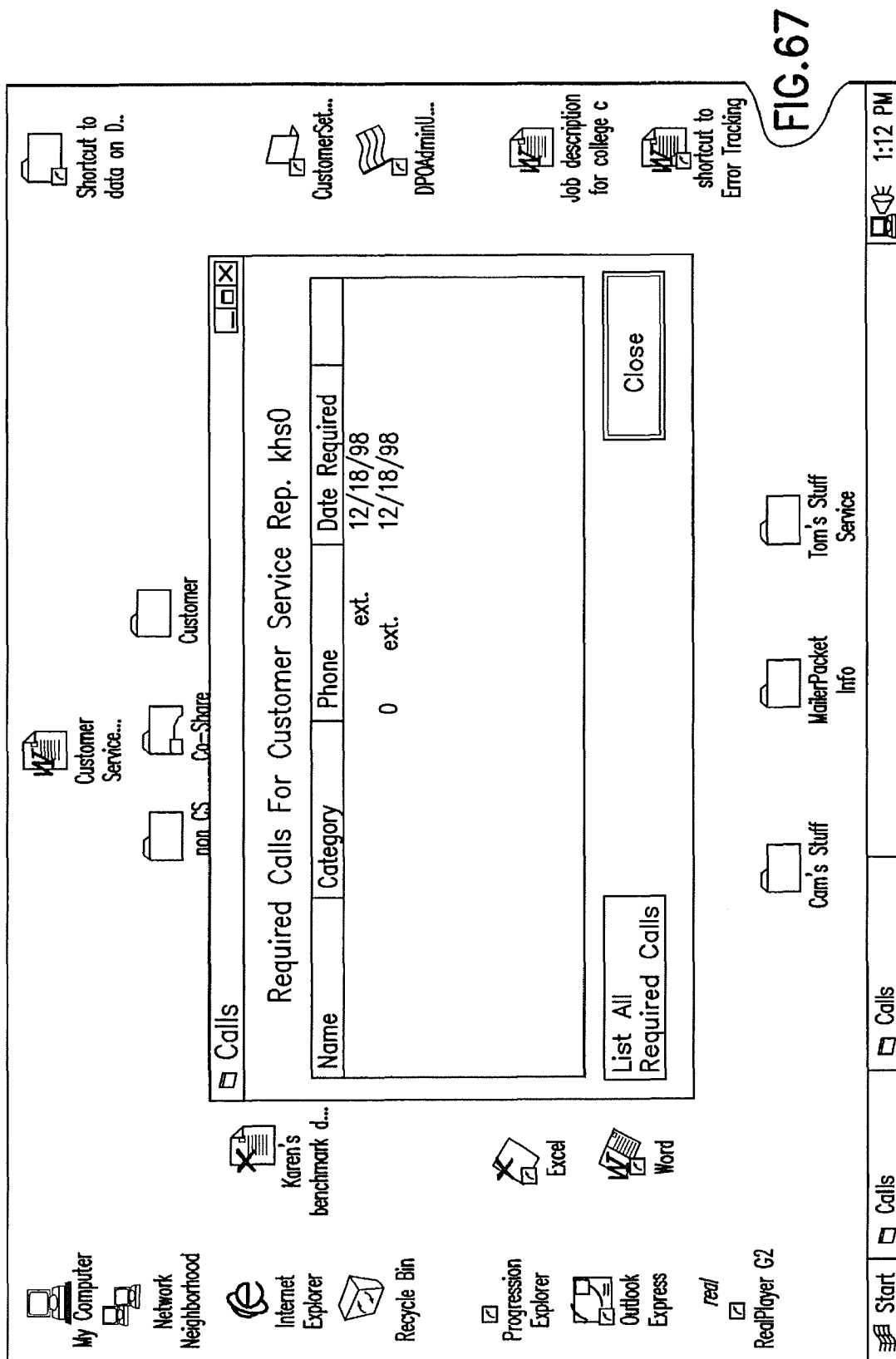
New Call View Calls Credit Card Info Dentist Info Edit Save Close

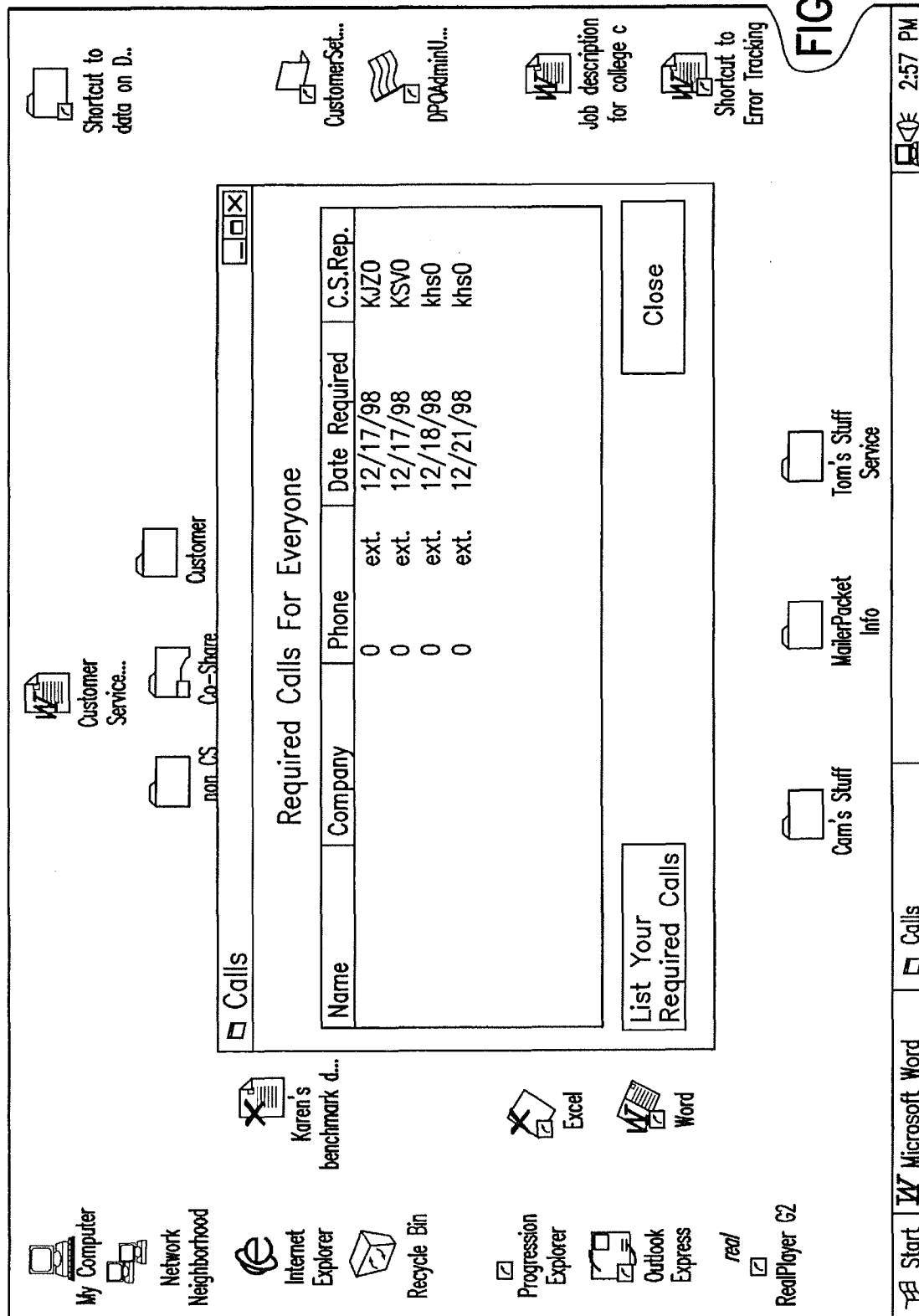
Shortcut to data on D.. CustomerSet... DP0AdminL... Job description for college c shortcut to Error Tracking

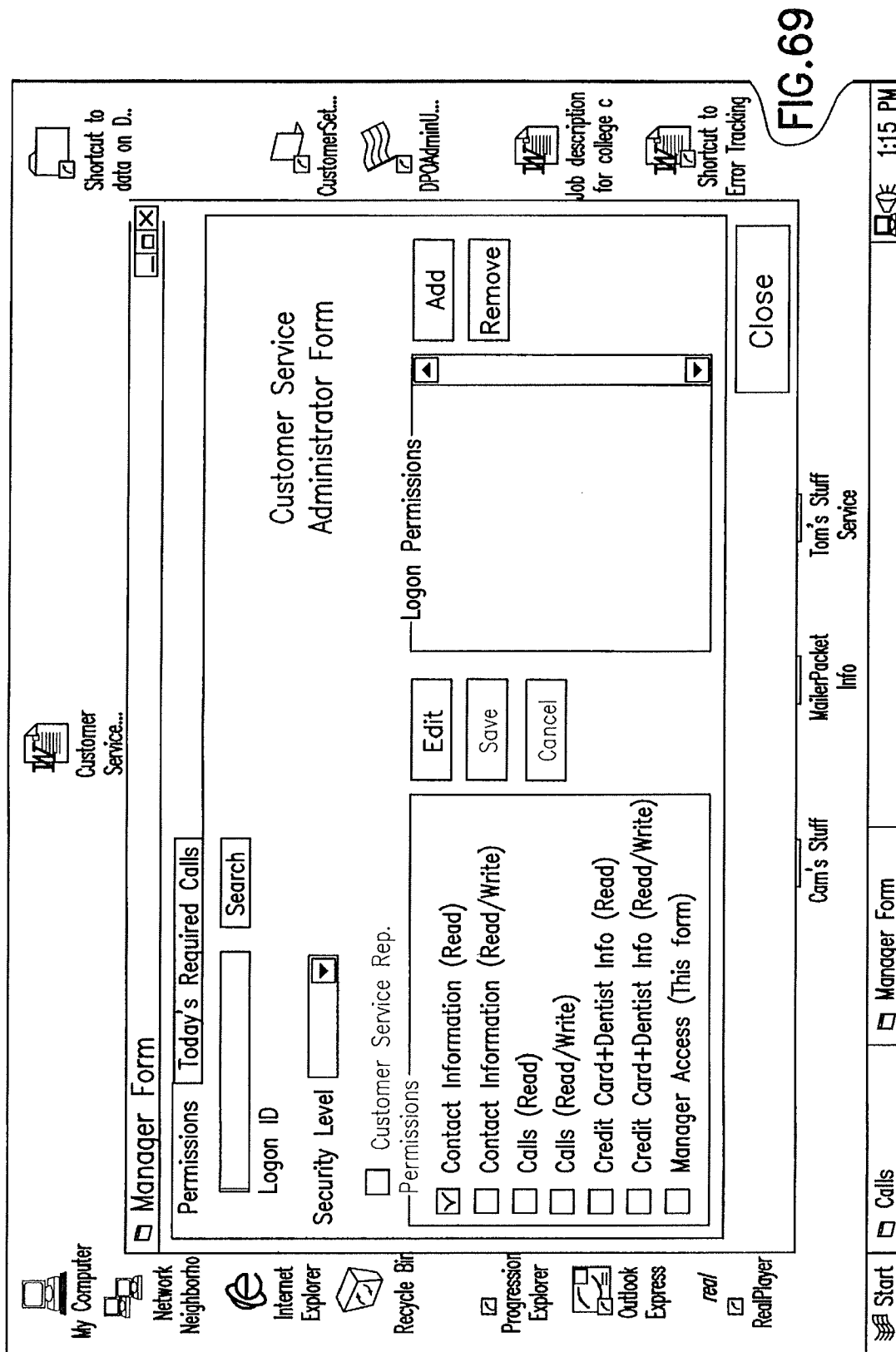
FIG. 65

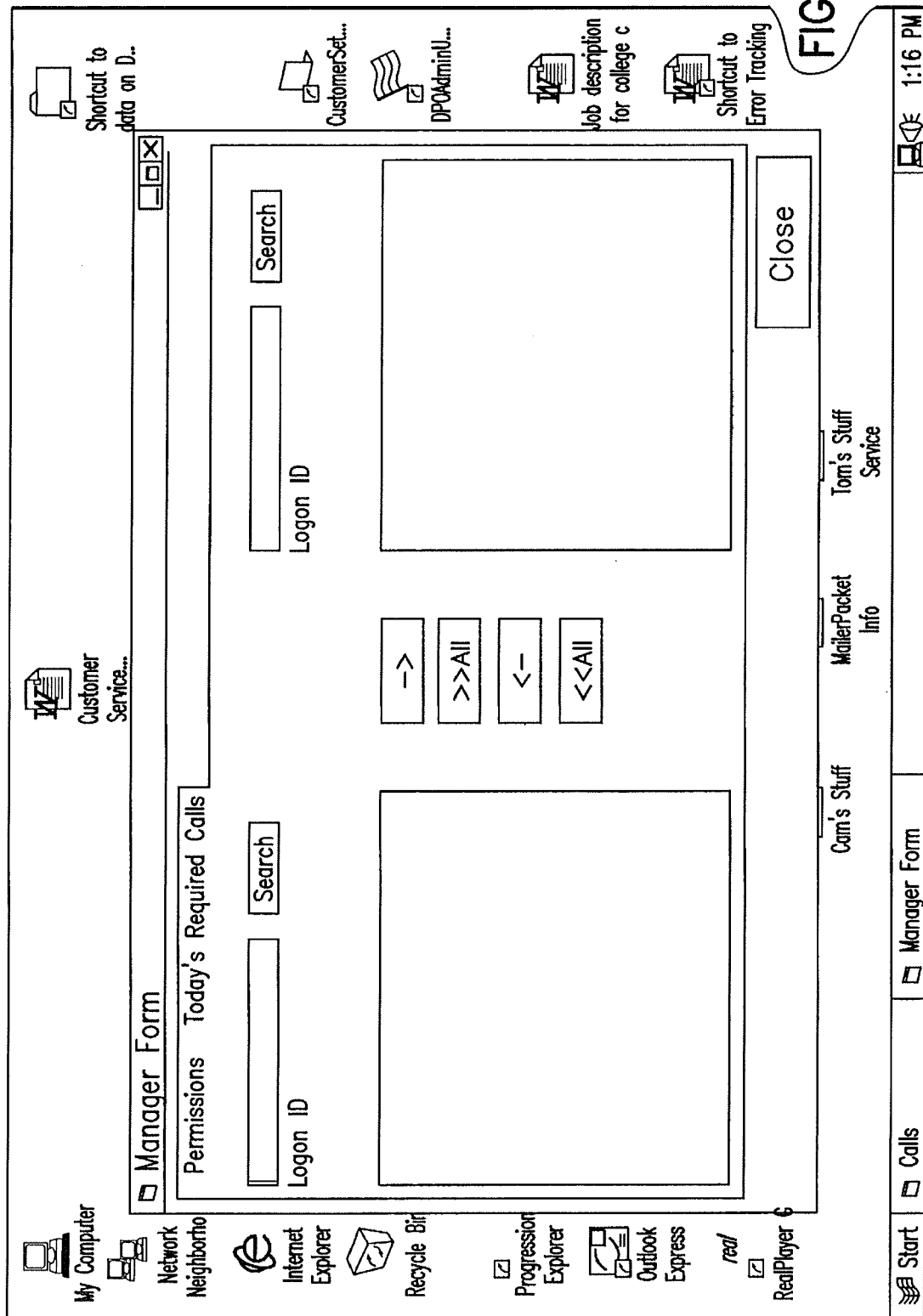
Start Microsoft Word Main Menu Customer Call Tracking 1:27 PM







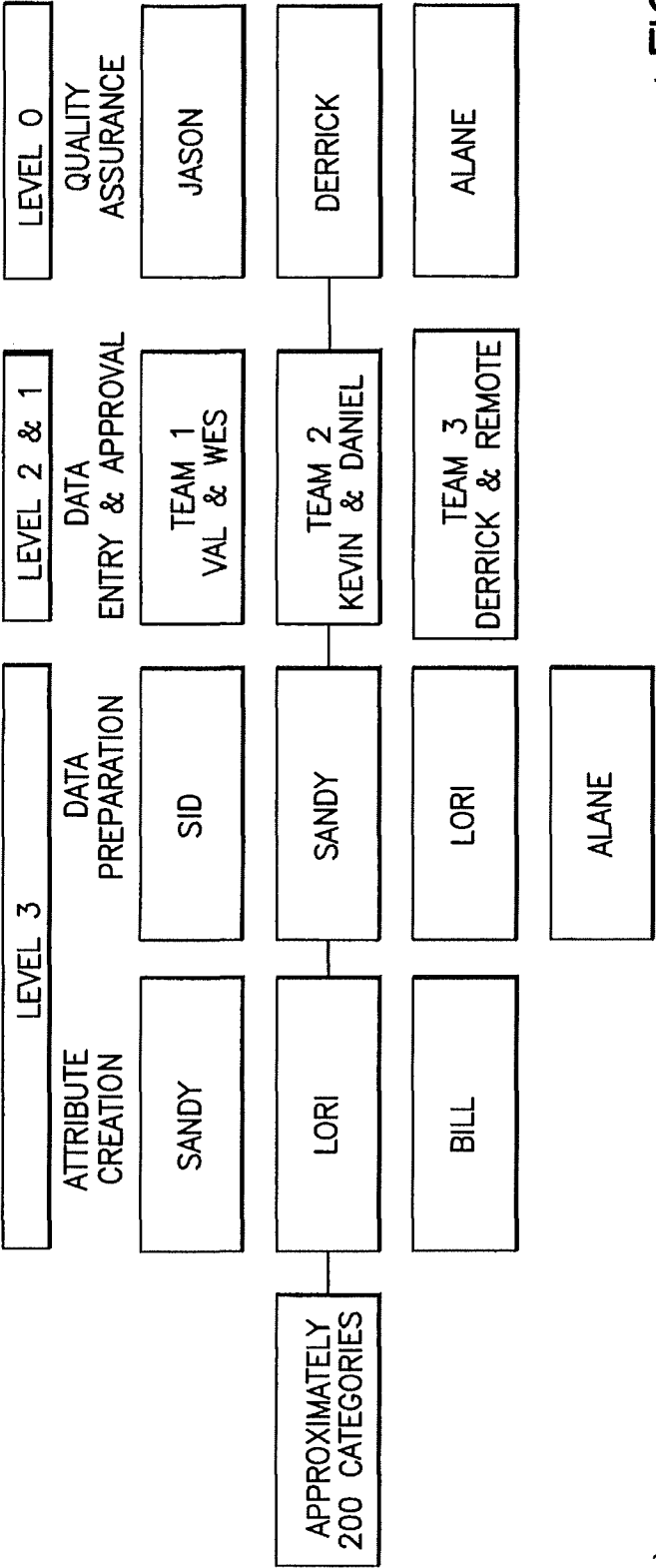




CATEGORY CREATION PROCEDURE
FOR REMAINING SUB-CATEGORIES

OBJECTIVE: TO ESTABLISH A DATABASE STRUCTURE AND POPULATE IT IN SUCH A WAY THAT PRODUCTS CAN BE EASILY AND LOGICALLY IDENTIFIED BY THE MAJORITY OF GENERAL DENTAL PRACTITIONERS.

- LEVEL 3: STRUCTURE CREATION
- ESTABLISH CATEGORIZATION STRUCTURE &
DOCUMENT INDUSTRY NUANCES
- LEVEL 2: DATA ENTRY
- BUILD DATABASE STRUCTURE ESTABLISHED BY LEVEL 3
- LEVEL 1: DATA ENTRY
- POPULATE DATABASE ESTABLISHED BY LEVEL 2
- LEVEL 0: QUALITY ASSURANCE
- VERIFY SUB-CATEGORY AND VENDOR COMPLETENESS



NEW PRODUCT ENTRY PROCEDURE
FOR EXISTING AND/OR NEW VENDORS

OBJECTIVE: TO EFFECTIVELY AND ACCURATELY POPULATE DATABASE WITH NEW PRODUCTS
USING DATABASE STRUCTURE ESTABLISHED IN THE CATEGORY CREATION PHASES.

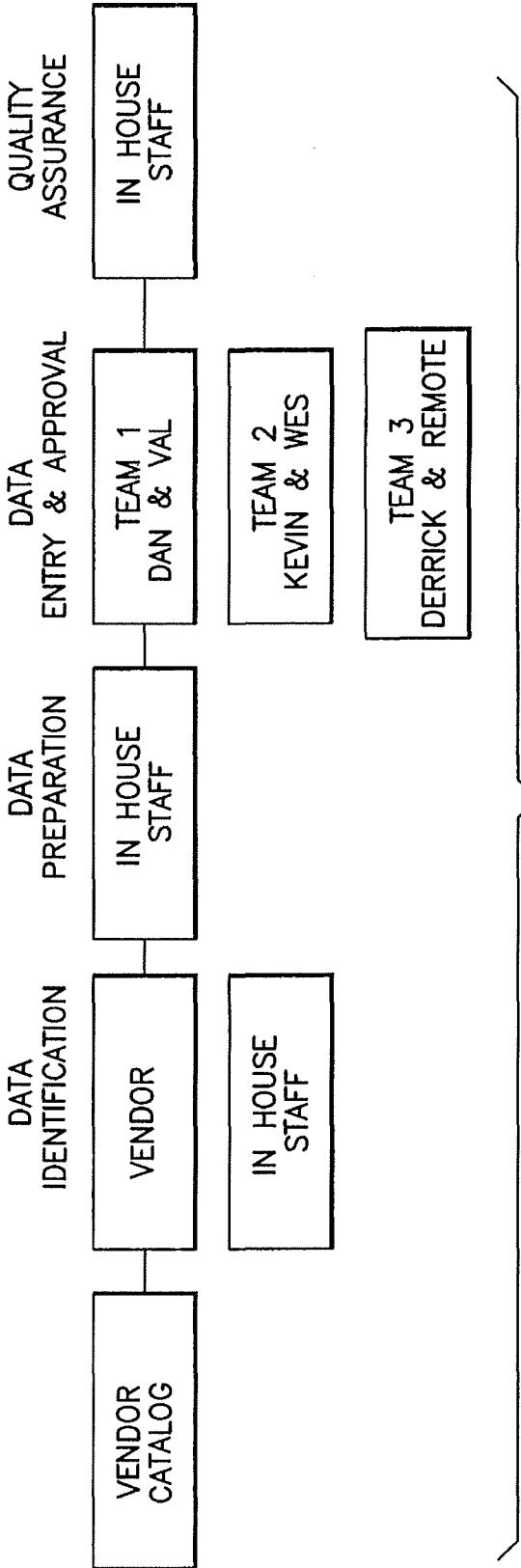


FIG.72

INTERNET-BASED ON-LINE COMPARISON SHOPPING SYSTEM AND METHOD OF INTERACTIVE PURCHASE AND SALE OF PRODUCTS

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a computer network-based on-line comparison shopping system and method of interactive purchase and sale of products, as well as component subsystems, modules and aspects of such system, and constituent approaches and methodological aspects associated with such method of interactive purchase and sale of products.

2. Description of the Related Art

With the proliferation of networked computer systems, including the World Wide Web (Internet), there has been a corresponding evolution of and interest in electronic commerce.

Electronic commerce (or e-commerce, as it is sometimes called) involves on-line accessing of information about purveyed goods and services, and the associated capability to electronically effectuate a transaction involving selected goods and/or services (collectively referred to herein as "products"). Although this medium of electronic transactions is still in its infancy, the development of encryption and other, security features has propelled this form of commerce from a small-scale emergence to an ever-increasing level of prominence in industrial transactions as well as consumer shopping and on-line purchases.

The art therefore has developed a variety of forms of transactional sites for on-line purchase and sale transactions, and these continue to evolve. Aside from obvious security requirements, there is a need for purveyed products and services to be quickly and efficiently assessed by the prospective purchaser for decision-making purposes, and for the transaction to be similarly quickly and efficiently effectuated once a decision has been made. Further, there is a need for information for the making of a purchase decision based on comparison of the purveyed products, as to their features, such as overall price, unit price, volume discounts, quality, and/or source. Furthermore, there is a need for enabling consumers to view such information in a readily assimilated format, such as a grid or matrix format that may be proprietary to the shopping site. Additionally, there is a need of a prospective purchaser for access to his or her prior purchase history, to facilitate repeat purchases or simplification of the decisional processes involved in a current purchase transaction.

It accordingly is an object of the present invention to provide a computer network-based on-line comparison shopping system and method of interactive purchase and sale of products, that meet the aforementioned needs and objectives.

Relative to the system and methodology of the present invention, art relevant to the invention includes the following.

U.S. Pat. No. 5,842,178 issued Nov. 24, 1998 to Joseph Giovannoli describes a computerized quotation system and method in which buyers formulate requests for quotation and transmit them to a computerized network which broadcasts the request for quotation to prospective sellers based on filter conditions set by the buyer and/or seller and/or computer network operator. The filter-compatible sellers'

responses are communicated to the prospective buyer either over the communications network or via other communication means.

U.S. Pat. No. 5,692,132 issued Nov. 25, 1997 to Edward J. Hogan describes a commercial transaction system for interaction by a user of a personal computer with Internet-based merchant computers to conduct cashless transactions, in which the amount of the transaction is deducted from a balance and the balance can be reset.

U.S. Pat. No. 5,757,917, issued May 26, 1998 to Marshall T. Rose, et al. discloses a network-based commercial transaction system for communication between qualified user-sellers and user-buyers, utilizing an authorization code and encryption to achieve secure transactions.

U.S. Pat. No. 5,835,712, issued Nov. 10, 1998, to Fred DuFresne, discloses a system and method using a template, accessible to both client and server, for constructing Web source text. The source text includes HTML tag extensions for implementing dynamic Web environment. The tag extensions are nested and grouped to form scripts to perform specific tasks, such as state construction and on-line data arrangement. Each tag extension or script is expanded and replaced with data value to be embedded within a traditional HTML tag. A processor is employed to process templates and execute tag extensions therein, and produces pages in pure HTML form for displaying by any Web browser.

U.S. Pat. No. 5,715,314, issued Feb. 3, 1998, to Andrew C. Payne, discloses a network-based sales system which includes at least one buyer computer for operation by a user desiring to buy a product, at least one merchant computer, and at least one payment computer. The buyer computer, the merchant computer, and the payment computer are interconnected by a computer network. The buyer computer is programmed to receive a user request for purchasing a product, and to cause a payment message to be sent to the payment computer that comprises a product identifier identifying the product. The payment computer is programmed to receive the payment message, to cause an access message to be created that comprises the product identifier and an access message authenticator based on a cryptographic key, and to cause the access message to be sent to the merchant computer. The merchant computer is programmed to receive the access message, to verify the access message authenticator to ensure that the access message authenticator was created using the cryptographic key, and to cause the product to be sent to the user desiring to buy the product.

U.S. Pat. No. 5,825,881, issued Oct. 20, 1998, to Bryan Colvin, Sr. teaches a system for conducting commerce over a large public network such as the Internet which facilitates communications between a merchant, a customer, and a bank or credit card processor.

Commercial on-line shopping sites having comparison shopping capability include the following Web sites: www.acses.com; www.bottomdollar.com; www.buying-guide.com; www.comparenet.com; www.consumerworld.org; www.jango.com; www.junglee.com; and www.shopfind.com.

It is another object of the present invention to provide a computer network-based on-line comparison shopping system and method of interactive purchase and sale of products, that provides comparison shopping capability via a dynamic database permitting access by a prospective purchaser to the products and/or services of a variety of vendors and products, by selecting a variety of attributes for custom shopping.

It is yet another object of the present invention to provide a searchable database and on-line shopping system compris-

ing same, in which a search of the database yields a uniformly productively result (a definite selected result), in contrast to the state of the art database systems, such as those conventionally used for word searching, which can result in a "dead end" result (e.g., a search that has no matches, or a system request for clarification).

It is a still further object of the invention to provide a computer network-based on-line comparison shopping system and method of interactive purchase and sale of products, that permits a prospective purchaser to construct custom order templates, optionally based on or incorporating information from prior purchase transactions, in a quick and easily effected manner.

Other objects and advantages of the invention will be more fully apparent from the ensuing disclosure and appended claims.

SUMMARY OF THE INVENTION

The present invention relates generally to a computer network-based on-line comparison shopping system and method of interactive purchase and sale of products.

In one aspect, the invention relates to a searchable database comprising a multiplicity of tables including an attributes table and a values table for a multiplicity of target search items constructed and arranged so that selection of values for one or more target search item attributes yields an attribute-value construct specifying a particular one of said target search items and precluding an indeterminate search result.

Another aspect of the invention relates to an online comparison shopping system comprising: a searchable database containing product selection information for products from different sources; and a user interface operatively coupled to said database for user manipulation thereof to select product(s) based on product selection information and constructed and arranged to communicate ordering information to source(s) of selected product(s).

A further aspect of the invention relates to an online comparison shopping system comprising a database containing product information of multiple vendors, manufacturers and/or products and a user interface generating a virtual shopping cart, and constructed and arranged to enable a user to selectively aggregate an order in said virtual shopping cart, comprising products represented in said database, and means for electronically disaggregating said order to generate vendor-specific orders to respective vendors.

Yet another aspect of the invention relates to a computer network-based on-line comparison shopping system, comprising an operational World Wide Web site having the description, content, look, feel, function, structure, architecture, operation, sensory features, aesthetic characteristics and substance of the World Wide Web site "Dental-Purchasing.com."

A further aspect of the invention relates to a method of conducting electronic commerce involving online comparison shopping comprising providing a database containing product information of multiple vendors, manufacturers and/or products, and a user interface generating a virtual shopping cart, and manipulating said user interface to selectively aggregate an order in said virtual shopping cart, comprising products represented in said database, and electronically disaggregating said order to generate vendor-specific orders to respective vendors.

In another method aspect, the invention relates to a method of constructing and populating a database with a

series of standardized product descriptors which can be employed by a user to compare fungibly equivalent products from different sources to select product(s) therefrom, comprising identifying a set of attributes and establishing same in said database for said fungibly equivalent products, and establishing in said database a multiplicity of selectable values for each of said attributes wherein each of said values is independently selectable to define a unique attribute-value chain for a fungible product group.

An additional aspect of the invention relates to a comparative purchase process comprising: querying a database populated with a series of standardized product descriptors that can be employed by a user to compare fungibly equivalent products from different sources to select product(s) therefrom, wherein said database contains a set of attributes for said fungibly equivalent products and a multiplicity of selectable values for each of said attributes wherein each of said values is independently selectable to define a unique attribute-value chain for a fungible product group, wherein said query yields a attribute-value chain for a group of fungibly equivalent products; and generating a comparative selection grid comprising product information for said group of fungibly equivalent products thereby enabling the user to select a specific product from said comparative selection grid.

Another method aspect of the invention relates to a method of qualifying product data for inclusion in a database comprising: identifying a series of standardized product descriptors which characterize fungibly equivalent products from; different sources; identifying a set of attributes for said fungibly equivalent products; establishing a set of selectable values for each of said attributes wherein each of said values is independently selectable to define a unique attribute-value chain for a group of fungibly equivalent products; and verifying the accuracy of attribute-value chain information as a condition for entry in the database.

Another method aspect of the invention relates to a method of interactive purchase and sale of products, comprising the steps of providing an operational World Wide Web site having the description, content, look, feel, function, structure, architecture, operation, sensory features, aesthetic characteristics and substance of the World Wide Web site "Dental-Purchasing.com," selecting products by comparison shopping to determine the products meeting a predetermined selection criterion, and placing an order at said World Wide Web site for subsequent shipment.

Yet another aspect of the invention relates to a computer network-based on-line comparison shopping system, comprising an operational World Wide Web site having the description, content, look, feel, function, structure, architecture, operation, sensory features, aesthetic characteristics and substance of the World Wide Web site "Dental-Purchasing.com."

The invention in another aspect relates to a method of interactive purchase and sale of products, comprising the steps of providing an operational World Wide Web site having the description, content, look, feel, function, structure, architecture, operation, sensory features, aesthetic characteristics and substance of the World Wide Web site "Dental-Purchasing.com," selecting products by comparison shopping to determine the products meeting a predetermined selection criterion, and placing an order at said World Wide Web site for subsequent shipment.

Additional aspects, features and embodiments of the invention will be more fully apparent from the ensuing disclosure and appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

FIGS. 1–54 are representations of screens constituting various views of a graphical user interface and reports generated by a computer program for a computer network-based on-line comparison shopping system that may be used to conduct a method of interactive purchase and sale of products, in accordance with one embodiment of the invention.

FIG. 55 is a schematic representation of an on-line purchase and sale system for conducting transactions in accordance with an illustrative embodiment of the invention.

FIGS. 56–58 together form a schematic representation of the content of a dynamic database constructed to carry out an on-line purchase and sale transaction in accordance with the method of the invention, in one embodiment thereof.

FIGS. 59–70 show various screens constituting graphical user interface output of a Web site software computer program according to another aspect of the invention, deriving from a Customer Service Utility module of such software program.

FIG. 71 is a schematic representation of a relational product entry procedure for existing and/or new vendors, to input product information and to ensure its quality.

FIG. 72 is a relational depiction of a category creation procedure for products, as carried out to establish a database structure and populate it in such a way that products can be easily, logically and positively (no empty search or dead-end results) identified system users.

DETAILED DESCRIPTION OF THE INVENTION, AND PREFERRED EMBODIMENTS THEREOF

While the ensuing description is directed primarily to a Web-based system, it will be recognized by those of skill in the art that the invention may be utilized by and embodied in other networks or data processing systems.

The present invention provides a computer network-based on-line comparison shopping system and method of interactive purchase and sale of products, that in one embodiment features a dynamic database of goods and/or services by attributes that facilitate shopping for the purveyed products, and which generally enables the prospective purchaser to definitively (no empty search or dead-end results) access comparative information about the goods and/or services of interest, and permits the decisional processes and implementation of an order for the desired products to be quickly, securely and effectively achieved.

The present invention, in one aspect, utilizes a shopping cart that is selectively aggregatable and disaggregatable, in assembly of an order and subsequent order processing. By this feature, the system of the present invention achieves a capability not realized by online shopping systems of the prior art.

The system of the applicants' invention for online shopping, embodies product information of multiple vendors, manufacturers and products, thereby enabling the user to selectively aggregate an order in the virtual shopping cart across the spectrum of such vendors, manufacturers and products. Once the order has been assembled, the order is electronically disaggregated by the software to produce vendor-specific orders which are transmitted to each individual vendor whose products have been selected.

Although the invention will be illustratively described hereinafter with reference to an exemplary system for on-line shopping and purchase/sale of dental products, it

will be appreciated that the invention is not thus limited, but may be applied to any goods and/or services. Accordingly, the invention as described hereinafter is depicted by way of example only, and is not to be limitingly construed, as regards the nature and scope of the present invention.

The description, content, look and feel, function, structure, architecture, operation, sensory features, aesthetic characteristics and substance of the World Wide Web site "Dental-Purchasing.com" are hereby incorporated herein in their entirety.

The following embodiment relates to a World Wide Web Internet site and associated computer software and hardware for the comparison and purchase of dental supplies from multiple vendors. To facilitate comparison, all products are categorized by means of a dynamically generated database, as follows. Each product is assigned a series of descriptive attributes and a value for each attribute, as set out in Table 1 below.

In this manner, an attribute-value chain is created.

TABLE 1

Attribute-Value Chain	
Attribute	Value
Category	Anesthetic products
Anesthetic subcategory	Local anesthetic
Local anesthetic type	Lidocaine 2%
Local anesthetic vasoconstrictor	Epinephrine 1:50,000
Local anesthetic packaging	1 box of 50 1.8 ml carpules

Each choice of value then can be used to determine the next applicable attribute. Each attribute can then have a potentially limitless number of values. Thus, although there is a 1:1 correspondence shown illustratively in Table 1, where each attribute is shown with a single corresponding value, it will be appreciated that many selected values may be applied to a single attribute. For example, the attribute "Category" may include not only "Anesthetic products" but also "Burs," "Linings," "Cosmetic dentistry," "Disposables," "Infection control," "Instruments," "X-ray products," etc.

Together, the attributes and the values form attribute-value chains that identify generic products in the database. Once a chain is formed (like the one in Table 1) a generic description based on the values of the chain is appended to the chain, e.g.,

Lidocaine 2% Local Anesthetic with Epinephrine 1:50,000, 1 Box of 50 (1.8 ml) Carpules

This addition of the successive attributes and values finalizes the generic specification of a single product (denoted here as "Generic Product" or sometimes hereinafter as a "DPO Product," the prefix DPO denoting a generic character of the product involved).

All of this information may, for example, be stored in a series of 4 database tables (see FIGS. 56–58, including an Attribute table, a Value table, a DPO Detail table (which stores the chains or attribute/value pairs), and a DPO Product table (which stores descriptions). Other meaningful information that is stored may include the date and time the product data was entered, the data entry operator who entered the product data, and a status of the product data (Active/Inactive).

At this time, Manufacturers, and Brands (if applicable) are also attached to the products. Next, this generic product data is associated with specific vendors to create a Vendor Product. Finally, quantity and pricing information is added, to produce an informational matrix, such as the matrix set out in Table 2 below.

TABLE 2

<u>Search Results Grid</u>						
Vendor	Product Code	Manufacturer	Brand	1	5	10 20
Carolina Dental Supply	CD365-5310	Novocol	Octocaine	\$12.25		\$11.75
RJM Discount Dental	0171-05279	Novocol	Octocaine	\$12.25		\$11.45 \$10.95
RJM Discount Dental	0171-05281	Septodont	Lignospan Forte	\$12.65		\$12.25 \$11.75
Sullivan Schein	365-5310	Novocol	Octocaine	\$13.49	\$12.99	\$12.49

All of this information is preferably stored in another 5 tables (see FIGS. 56–58), including, for example, a Vendor Product table, a Vendor table, a Brand table, a Manufacturer table, and a Price table. Additionally, the Vendor's contact information is stored in a Contact Information table, along with the contact information (telephone and fax numbers, email addresses) of the vendor, for facilitating contact of the vendor by users of the on-line system. Other meaningful data that may be stored in the system includes date and time the product information was entered, the name of the individual who entered the product information, the status of products and vendors, the location of a picture of the product (if any), a detailed product description (if any), the location of vendor's Internet home page (if any), and the vendor's commission percentage, as paid by the vendor to the on-line system operator based on the sales of the vendor's wares at the on-line Web site in operation of the on-line system.

All of the above-described tables and relationships provide the user with an on-line shopping experience, in which the prospective buyer can search the database of product-related information in a variety of ways to find a specific item of information, and in which the prospective buyer can compare, on a proprietary search results grid, the pricing for a same basic product among several different vendors, manufacturers, and brands, including transactional terms such as quantity discounts. The word "proprietary" as used herein in reference to the search results grid refers to the fact that the database proprietor can readily configure the search results grid in a distinctive manner that is unique to a given Web site or application of such system.

The search mechanisms that may be embodied in and/or facilitated by the software and hardware on-line shopping system include search capabilities by:

Category searching—searching by attributes and values, utilizing suitable controls such as for example ActiveX, Java, and/or HTML controls

Vendor searching—utilizing the same controls, but limiting searches and search results to the product line of a single vendor

Brand searching—using the same controls, but limiting searches to a single brand

Manufacturer searching—using the same controls, but limiting searches to a single manufacturer

Code searching—searching in which the prospective purchaser enters the vendor's product code and obtains a comparison grid of information for the corresponding product

Index searching—searching through an alphabetical listing of the first and second level attributes to aid in

finding subcategories whose parent category may not be completely evident

Order History searching—searching providing information that allows users to obtain information about items and quantities they previously ordered.

The user experience using an illustrative embodiment of the invention is now described.

When an individual user accesses the on-line shopping Web site, the user is given the option of taking a tour of the site or registering. The registration sequence involves request for response to the following queries:

Name (First, MI, Last)

Email Address

Password (user's choice)

Where'd you hear about us?

All of the foregoing information is stored, and the user is immediately emailed with an account name (LogonID) and password. Account names are formed as first initial, middle initial (if entered), last initial, and followed by a number (e.g., John Q. Customer may be assigned the account name JQC2). These suffixed numbers are sequential.

The user can then use this information to log into the on-line shopping Web site and search for products. A record is added to the LogonRecords table each time a user attempts to log into the site, and this table stores successes, failures, and the user's Internet address. The user is allocated a "virtual shopping cart." As products are found by the user, they can be added to the user's shopping cart. Shopping carts are stored in the system database in a shopping cart table. Users can add items to their cart over a period of time before placing an order. A user can leave the site, return to it at a later date, and the items will still be in their cart. This feature is termed a "persistent shopping cart" and eliminates the need for the user to keep a "shopping list" off-line.

As mentioned hereinabove, the shopping cart employed in the instant invention, is of an aggregatable/disaggregatable character, meaning that the order for products is assembled by a user across the full spectrum of the database, and thus includes a multiplicity of vendors, manufacturers, products, etc. This important aspect of the applicants invention permits the system proprietor to assemble at a single Web site or other cyberspace location, an extensive collection of products from a variety of manufacturers and suppliers.

This broad spectrum capability of the applicants' invention therefore permits a user to assemble an order which may

involve very different and numerous products deriving from numerous independent sources, based on attribute-value chains which enable comparison shopping and selection according to the user's unique needs and requirements (by the user's selection of appropriate values for each of the selected attributes).

The system may be configured to require the user to provide a selection value for each attribute of the attribute-value chain, so that the product selection is fully specified. Alternatively, the system may be configured such that the attributes may be selected in type and number, so as to accommodate such unique needs and requirements. For example, the user may construct a very short attribute-value chain for a correspondingly less specific shopping interaction, or conversely, the user may construct a very elaborate attribute-value chain, for a correspondingly more specific (e.g., highly targeted) shopping interaction.

In operation of the system, a shopping cart can be saved as a template. Templates involve two tables, a header table that identifies the owner of the template and a description of the template, and a line table which contains the individual items stored in all templates and a reference to the header table. This feature allows a user to create lists of frequently ordered items thereby making the process of repetitive ordering very simple.

When an order is placed, the user is asked to supply additional information, including for example the user's billing address, shipping address, credit card information, credentials, etc. A total of 11 tables are used to track all of this information, in addition to the information already gathered. These tables provide the ability to classify users as a certain type of consumer. The shopping cart then is disaggregated and the orders for the goods and/or services are transmitted electronically to the corresponding individual vendors. A copy of the order is stored in the user's order history. Order history involves 2 more tables, a header and a line table, just as with templates. The order history tracks products, quantity, price paid, date, and information regarding the order's status.

The shopping cart in operation of the system is therefore aggregated by the user through selections from grids generated by attribute-value chain searches, and then is disaggregated (electronically separated) by the system for electronic routing to the individual vendors. The individual vendors of the selected products, upon receiving the electronic order from the system for such products, then process the orders for fulfillment and shipment or delivery of products to the system user.

The online comparison shopping system of the invention therefore operates as a virtual mall for the purveyed products. A direct transactional link is established between the product supplier and the purchaser, thereby facilitating and enabling electronic commerce involving such products. The vendor therefore has an advertising and promotional forum, and hyperlinks may be embedded in the system to the vendors' home pages or other Web sites. The system proprietor, in providing the shopping forum for the vendor's products, thereby provides an outlet service to the vendor, which may be compensated by a mutually agreed compensation schedule or commission rate.

The computer program of the on-line shopping system may further comprise an administrative capability, including functional components such as a data entry module, a customer service module, and an administrative utility.

Three tables may be involved for data entry in the data entry module, to allow products to be entered, then approved, before being published to the main database of the

system. Two tables are used to track current products (TentativeProduct) and rejected products (TentativeProductReject.) These tables track a Querystring (a complex representation of a Vendor Product), the name of the person who entered the product, when the product information was entered, and who rejected the product in the case of a rejection. When a product is approved, it is added to the other tables and removed from these data entry tables. A third table is used to track the rates that are paid to remote data entry staff.

Four tables are used for customer service, to track calls and staff permissions. The call tracking system tracks incoming calls as well as outgoing follow-up calls.

Six tables are used by the administrative utility for accounting/bookkeeping functions.

The structure, function and operation of an illustrative Web site computer program will now be described with reference to an illustrative sequence of graphical user interface screens that are presented to a user accessing and operating the program to conduct an on-line shopping transaction, followed by description of the shopping transaction with reference to a schematic flowsheet showing the constituent steps of such transaction, and description of a database structure that may be employed to carry out the functions and achieve the objectives of the invention.

FIGS. 1-54 are representations of screens constituting various views of a graphical user interface and reports generated by a computer program for a computer network-based on-line comparison shopping system that may be used to conduct a method of interactive purchase and sale of products, in accordance with one embodiment of the invention.

In one aspect, the graphical user interface contains various text pages which are linked to other pages via a hypertext link. The links may be displayed by a browser as colored and underlined text, as a virtual button, virtual tab or other means known in the art.

The various pages of the graphical user interface allows a user to view a text document displayed on a display device connected to the user's computer and to access, retrieve and view other data objects that are linked to hypertext words or phrases in the hypertext document. The user may "click on," or select, certain words or phrases in the text that specify a link to other documents, or data objects. In this way, the user is able to navigate among data objects. The data objects may be local to the user's computer system or remotely located over a network or over the World Wide Web.

User Interface Module

The system has a user interface module that is preferably programmed in a language operational in an Internet or intranet environment. For example, the applicants have programmed the user interface module in using ActiveX controls and Java languages.

FIG. 1 shows an exemplary "main page" of the user interface module, including a first screen constituting a portion of a graphical user interface generated by a computer program for a computer network-based on-line comparison shopping system that may be used to conduct a method of interactive purchase and sale of products, in accordance with one embodiment of the invention. As shown by the screen, the software generating same is browser compatible, using an Internet browser such as Microsoft Internet Explorer or Netscape Navigator, for manipulation of the interface screens and functions thereof.

The first screen 10 includes mouse-activatable function bars, including "About us," providing information about the source organization providing the software for the Web site,

11

"How to become a supplier," providing information to prospective vendors about the criteria and procedure for representation at the Web site, and "Contact us," providing correspondence and communication information, for user contacting of the source organization. Such first screen also contains a central region containing the text, "Click Here to Shop Now," the mouse actuation of which region moves the user to a second screen.

Thus, from the main page, the user can access other portions of the user interface module. For example, in a preferred mode, the user can access components such as the shopping, supply, service, company information, contact information or vendor information request form components of the user interface module.

The user can select the "shopping" option, which permits the user to log into the shopping portion of the user interface module. For example, selection of the shopping option can link the user to a "log in" page which contains links to a registration page for unregistered users, shopping as a guest, or logging in for registered users. The log in page can also link the user to a "forgotten passwords" page, where the user can enter his or her ordinary e-mail address to prompt the system to send the user an e-mail with the forgotten password.

FIG. 3 show an exemplary "main shopping page" for the shopping portion of the user interface module. This main shopping page preferably contains a means, such as a menu bar, for linking to other portions of the graphical user interface module, such as a homepage, a shopping page, an order history page, a templates page, a shopping cart, an edit account page, and/or a view help page.

The user can preferably select a link on the shopping main page to access to a "shopping page" which includes, for example, options permitting the user to search the database for products. Such searches may, for example, be by brand, by category, by manufacturer, by product code, by product index and/or by vendor.

Preferably at any point during the searching/shopping operation, the user can access the "shopping cart" page via a hypertext link. The shopping cart page preferably includes a variety of options for viewing and editing the shopping cart. For example, the shopping cart page preferably permits the user to recalculate quantities of items being purchased, i.e., to increase or decrease the number of any specific product being purchased. The shopping cart page may also have hypertext links which permit the user to place an order, create a template and/or empty the cart.

The user interface module also preferably contains an "edit account" page and/or menu which may be located on various pages within the user interface module, and which may, for example, contain options for editing primary contact information, billing contact information, shipping address information, credit card information, changing password, and changing control technology. As previously mentioned, the user interface module may be programmed in a variety of programming languages. The inventors have, for example, programmed the user interface module in both Java and ActiveX. The "edit account" page and/or menu preferably contains an option permitting the user to switch from the Java platform to the ActiveX platform and vice versa.

FIG. 5 shows a menu of the shopping main page having the "shop" and "shopping cart" menus extended.

The shop menu contains options permitting the user to shop based on various types of searching. For example, FIG. 5 shows a page which is selected when the user selects the option for a category search. The various searching mecha-

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nisms take the user through a decision tree (the "attribute value chain"), prompting the user to sequentially select values from a series of attribute categories. When the user has specified a value for each of the attributes in the attribute-value chain, the system provides the user with a means, such as a proprietary comparison grid, for comparing like products.

FIG. 5 shows the beginning of the category search, i.e., at the first level of the attribute value chain, whereby the user is prompted to select a product category. When the user selects a category at the first level, the program then proceeds to prompt the user to select a value for the next attribute level of the attribute value chain. For example, FIG. 6 shows a screen print out of a category search in which the user has proceeded to the fourth level. When the user has specified a value for each of the attribute categories in the attribute value chain, the system provides the user with a comparison grid of products, for example, screen prints showing portions of comparison grids resulting from category searches are displayed in FIGS. 7 and 8.

Unlike the databases of the prior art (e.g., word, phrase or boolean searches), the present database permits a variable and unlimited number of attributes to be assigned to each product. In other words, the length of each attribute value chain varies depending on the number of attributes necessary to fully distinguish the product from other products. The number of attributes is limited only by the practical need to enable the user to complete the search process within a reasonable time. The number of attributes within the same database can vary with each item, thus, for example, where the system is used to sell a product line, such as dental supplies, some products, such as facial tissues may have a relatively short attribute-value chain having 4 or 5 attributes, while other products, such as drills, may have a long attribute-value chain, having a greater number of attributes.

Categorization and sub-categorization of each product in the system by means of the data entry module results in decision trees of the system of the present invention having the advantage that they guide the user through the search such that no search can fail to result in at least one product.

As previously noted, when the user has specified a value for each of the attribute categories in the attribute value chain, the system provides the user with a comparison grid of products. The columns of the grid preferably include information such as vendor, product code, manufacturer, brand and price. The system preferably has means for permitting the user to sort the grid by any of its columns. For example, the grid page can be programmed such that the user can select the title of any of the columns to sort the grid by that column. For example, the grid displayed in FIG. 9 has been sorted based on the vendor column. Alternatively, for example, the user could sort on the price column to quickly ascertain which are the lowest and highest prices.

The user interface module preferably permits vendor, manufacturer or brand searches each using a search control page which is analogous to the category search page. These pages can permit the user to easily search for products carried by a specific vendor, manufactured by a specific manufacturer or which include a specific brand.

FIG. 10 shows a vendor search at the first level of decision. This particular printed screen illustrates that for example, for the vendor "Action Team Medical," four categories are available at the first level of the attribute value chain. Vendor searches utilize only the vendor portion of the database while preserving the uniform results capability of the system.

FIG. 11 shows a manufacturer search at the first level of decision for the manufacturer Kodak, illustrating showing

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the possible values at the first level of the attribute value chain, including anesthetic products and x-ray products.

In performing any of the foregoing searches, the attribute-value chain automatically takes the user through all attributes of the attribute value chain having only one possibility. Thus, for example, when performing a brand search, the user preferably selects a particular brand from the brand list and the program then fills in each of the selection category criteria for that brand from the first level up to the first level at which the user has at least two choices. FIG. 12 shows a brand search for Ultra Speed DF-57 where the system has selected the categories and sub-categories up through the seventh level at which the user is prompted to choose between paper and vinyl.

The user can preferably access a product code search page, for example by selecting a hyperlink which links the shopping main page to the product code search page. This product code search page preferably permits the user to select a vendor from a list of vendors and to enter that vendor's product code. Searching by vendor product code preferably produces a comparison grid having the selected item highlighted followed by a list of comparable products from other vendors. An example of such a selection grid is shown in FIG. 13.

The user interface module preferably permits the user to access a product index, which lists the categories and sub-categories used in the system and provides links to a search screen which permits the user to select the variable values of the attribute value chain in order to isolate the product in which the user is interested. This provides an efficient method for the user to locate various sub-categories. For example FIG. 14 shows a product index for products having category/subcategory names beginning with G. The user can select the desired product from the product list to access a category search for that product, as shown in FIG. 15.

The user interface module preferably includes an order history page, accessible via hyperlink from various pages of the module. The order history page displays a series of the user's previous orders and also includes any savings quotes which have been generated for the user. Savings quotes are discussed in more detail below.

The user can select an order in which the user is interested, and the system will display that order. Alternatively, the user can specify period of time in which the user is interested (e.g., by specifying a start day and an end day), to produce a list including all products that have been ordered by the user within the specified time period. An exemplary history page is shown in FIG. 16. FIG. 17 shows a sample order history within a specified date range.

FIG. 18 shows a sample of the template page. The user interface module preferably permits users to create templates specifying any grouping of products in which the user is interested. For example, where the system is used for dental supplies, a user may wish to create a template containing all disposable ordinarily ordered by that user, for example on a monthly or quarterly basis. The user can then access the template to efficiently order disposables as needed.

The system thus permits creation of customized user templates ("custom templates") as well as providing a means for creating and displaying a list of standard templates. A list of custom templates may be displayed, for example, in a custom template frame, as shown in FIG. 18, while standard templates are preferably displayed in a separate frame, such as the standard template frame shown in FIG. 18. Standard templates are preferably present for all users and may, for

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example, include templates displaying the user's orders from the last 30, 60, 90, or 180 days, and/or the user's orders for the previous year, as shown in FIG. 18. The template preferably permits the user to load the template into the user's shopping cart, to edit the template, for example by changing quantities of items ordered and/or by entirely removing items from the template. An exemplary template editing page is shown in FIG. 20.

The user interface module also preferably permits the user to delete entire templates. However, it is preferred that the system permits the user to delete only custom templates and not standard templates.

FIG. 19a shows a top portion of a page of the user interface module where a user has selected the load template option from the template page. FIG. 19b shows a lower portion of a page of the user interface module where the user has selected the load template option.

The user interface module preferably contains a persistent shopping cart-type functionality, as well as a means for permitting a user to access and modify the shopping cart functionality of the invention. Internet "shopping cart" systems, such as the "shopping cart" function of www.amazon.com, generally permit a user to select items for purchase, which are then electronically stored for submission to the vendor. For example, the system preferably includes a shopping cart menu which permits the operator to view or edit the shopping cart, to recalculate the shopping cart, to place an order, to save the shopping cart as a template, and/or to empty the shopping cart. One important feature of the applicants shopping cart program is that the program preferably stores shopping cart entries into a database which is not located on the user's computer. This permits the user to sign off without losing the products of the shopping cart and signing back on later to add further products to, and/or remove products from, the shopping cart. As used herein, the term "persistent" in reference to the shopping cart means that the shopping cart is selectively retainable by the system, after a given transaction or interaction has been concluded. Such persistency permits the user to terminate the shopping interaction prior to ordering and to maintain the shopping cart in the state it existed at the time of termination, for subsequent resumption of the shopping interaction. Since the shopping cart persists in the database records of the system, the shopping cart can be accessed by a user on a different workstation and/or at a different location, without loss of the shopping cart contents from the prior interaction. This is one novel feature of the applicants' invention, which distinguishes it from prior art systems which store the contents of the shopping cart on the user's computer, so that it is not accessible from a different computer.

FIG. 21 shows a preferred shopping cart page having various items selected. The shopping cart grid will automatically recalculate the price term in the grid as a user changes the quantity information. Thus, for example, FIG. 22 shows a circumstance which the user has changed the quantity of the third item of FIG. 21 to zero. The system has changed the total price for that item to zero and the total price for the contents of the shopping cart has been correspondingly reduced by \$13.25.

The system preferably permits the user to recalculate the grid by selecting a "recalculate" option which will remove the zeroed items from the grid. FIG. 23 shows a screen print of the shopping cart of FIG. 22 after the "recalculate" option has been selected.

The system also permits the user to place an order based on the contents of the shopping cart. The ordering is discussed in more detail below.

The shopping cart page also permits the user to easily empty the shopping cart by selecting an appropriate hyper-text link.

The shopping cart page also preferably permits the user to "zero" all quantities in the shopping cart by selecting an appropriate option, such as the "zero qty" option shown in FIG. 23. This functional is particularly useful, for example, when a user has loaded a shopping cart from a template or order history and wishes to select only a few items for reorder.

FIG. 23a shows a variation of the shopping cart interface of the type illustrated in FIG. 23. The shopping cart of FIG. 23a shows the History column as including the link "Purchase History" in each row. By selecting "Purchase History" in a given row, a pop-up window is generated showing the user's order history for the corresponding product. The order history is shown at various time intervals (30 days, 90 days, 180 days, last year), as well as cumulatively ("All Orders"), with respect to quantity and total cost; the order history is also set out with respect to each order, showing its order number, date/time, quantity, unit price, and total cost.

The system also preferably includes a means for permitting the system operator to create quotes for users. Thus, for example, a potential user can mail a copy of an invoice to the operator of the system who can then use the system to create a quote comparing the prices paid by the potential user and the prices the user could have obtained by using the system. The savings quote entry page preferably contains a grid such as is shown in FIG. 24. The system also preferably contains a means for printing the quote and/or e-mailing the quote to user. The e-mail sent by the system preferably contains an attachment file which details the quote, as illustrated in FIG. 25. The system also preferably stores a copy of that quote in the users order history, which is accessible by the user, for example as shown for example in FIG. 26.

The shopping cart page also preferably permits the user to save a shopping cart as a template. Thus, for example, once the user selects the "save-as template" option, a "save template" screen, such as the screen displayed in FIG. 27, is displayed, which permits the template to be assigned a name and then saved. The template can then be accessed by the user, for example, via a custom template list, as shown in FIG. 28.

The system also preferably permits the user to edit various account information, such as primary contact information, billing contact information, shipping information, credit card information, and also preferably permits the user to change his or her password.

FIG. 29 shows an exemplary primary contact maintenance screen.

FIG. 30 shows an exemplary billing contact maintenance screen.

FIG. 31 shows an exemplary shipping address maintenance screen. The shipping address maintenance screen preferably permits the user to enter multiple shipping addresses as well as the ability to toggle between those addresses, for example, by selecting the "previous" or "next" options as shown in FIG. 310.

FIG. 32 shows an exemplary credit card information maintenance page.

FIG. 33 shows an exemplary password maintenance page.

FIG. 34 shows an exemplary "change control software" page which permits the user to change the platform software in which the system is run. Thus, for example, the user can switch between the system as programmed in ActiveX and the system as programmed in Java.

The system also preferably comprises a "help" function. Selection of the help option preferably brings up a context-

sensitive help page which provides the user with information, such as helpful hints concerning the feature from which the help page is accessed. An exemplary help page is shown in FIG. 35.

The system contains a means for using the shopping cart, as described more fully above, to place an order. The shopping cart page preferably has a means, such as a "place order" button, to access a purchase order screen. The purchase order screen preferably contains fields the user to change the shipping address, as shown in FIG. 36a. The user can preferably select one of the addresses, which are preferably maintained from a shipping maintenance page as discussed above.

FIG. 36b shows the second part of a purchase order page, showing a grid identifying the products from the shopping cart, as well as their prices. The grid also preferably includes a substitution option which permits the user to specify whether or not the user is willing to accept substituted products where the product as specifically ordered is not available. An exemplary substitution option is shown in FIG. 36b. The page preferably defaults to a "no to all" status and preferably has a "yes to all" function which permits the user to instantly select "yes" in all substitution fields.

The purchase order page also preferably has an "order" function which actually sends the order, as well as a "search again" function which permits the user to reenter the searching phase of the process and a "cancel order" function which cancels the order.

The order function preferably causes the system to display an order confirmation page which preferably displays the details of the order, as well as providing the user with an order confirmation number, as shown in FIG. 37. The order function is also preferably programmed to cause the system to send an e-mail to the user detailing the order and the order confirmation number. An exemplary e-mail is displayed in FIG. 38.

The user interface module also preferably contains a "shop as a guest" function which permits a non-registered user to explore the system but does not allow the actual placement of orders and omits pertinent information that would permit the non-registered user to use the system to find the cheapest prices and then order directly from the vendor. The "shop as a guest" function is designed to demonstrate the qualities of the site to potential users.

The user interface module also contains a "become a member" page which permits prospective users to enter information necessary for creating an account, for example, as shown in FIG. 39. The system is also preferably programmed to prompt a user for information which was omitted from the original member form. This prompting preferably occurs when the user attempts to make his or her first order, and preferably includes all information which is normally found in the "edit account" function.

The system also preferably contains a "how to become a supplier" option, which is preferably located on the main page and permits an unregistered vendor to access a vendor registration form. Once the vendor registers, the system permits the vendor to use the site to determine how it operates but preferably does not permit the vendor to place orders. The system also has a means for sending an e-mail containing the vendor registration information to the operator's sales and marketing department to permit further follow-up.

Data Entry Module

The Web site also contains a data entry module. The data entry module allows for categorization of products (or services) by a series of selected or created attributes and

values. Attributes for products (or services) include properties such as color, size, packaging, dosage, material, etc. Values are specifications for attributes such as blue, large, package of 10, twenty-five milligrams, stainless steel, etc. FIG. 41 shows the main page of the data entry module. The data entry module preferably prompts the user to select from a series of pre-existing attributes and values in order to develop a structure of subcategorization that fully embodies the product, and which results in a generic (ex: no manufacturer or brand) description for the product. At any point, the user can select to enter a new value option for a given attribute in order to create a new generic product.

The user may initially select a product structure either by selecting existing structures (existing attributes and/or values) or creating a new structure (new attributes and/or values) or selecting all structure from a product that already exists.

To select a structure from a generic product that already exists the specifications for a product can be entered based on the set of attributes and values of an existing product in the database. The data entry module is preferably programmed to permit the user to link to a vendor information pop-up window where the user can enter information relating to the product's vendor, such as the vendor name as well as the vendor code, as shown in FIG. 43. Once the user has entered the vendor name and vendor code, the data entry module preferably displays a screen containing all attributes of the specified item, such as the screen shown in FIG. 44. Then manufacturer, brand, and vendor can be added to complete the process as described subsequently.

If all the attributes and values of a new product match a product which is in the database, the system preferably prompts the operator that the product is already in the database and asks the operator whether he or she would like to add another product having the same description to the database.

Next, the operator is preferably asked to either enter or verify the description for the product. If the product is an existing product, the user is preferably asked to verify the description for the product, as shown in FIG. 45.

Next the user is preferably prompted by the data entry module to enter a manufacturer. The data entry module is preferably programmed to permit the user to specify an existing manufacturer, to add a new manufacturer or to indicate that the product has no manufacturer or that the manufacturer is undetermined, as shown in FIG. 46.

The data entry module then may prompt the operator to enter the brand of the product and has the option to select an existing brand, to enter a new brand, or to indicate that the product has no brand, or that the brand is undetermined, as shown in FIG. 47.

Finally, the user is asked to specify the vendor for the product, the vendor's product code, as well as the pricing and quantity information.

Next, the program may display a screen containing all the information which has been entered and prompt the user to verify the information, as shown in FIG. 49.

Once all necessary information relating to the product has been added, the product is preferably added to the tentative product table to await verification. The product stays in the tentative product table until it has been approved. Once the product is approved, it is then admitted into the main database. The tentative product approval process preferably operates such that a single user cannot approve products which that user has entered. This mechanism improves the accuracy of the process by ensuring that more than one person has the opportunity to review each group of infor-

mation prior to entry into the main database. FIG. 50 shows a picture of a product and the tentative product table.

Creating New Structure or New Attribute Value Chains

The pop-up menu for adding a new value to the database is shown in FIG. 51. After adding a new value, the user has the option of selecting an existing attribute from the next category, to determining which attribute will follow in the chain. The user can also enter a new attribute at any point to create a branch in the attribute value chain or can indicate that the attribute value chain has ended. A preferred pop-up for entering a new value is illustrated in FIG. 52. This data entry system can be utilized to categorize and correlate virtually any products or services the underlying structure and functionality being modular and replicable.

The Administration Utility

The system preferably contains an administration utility which interfaces with the database and with the other utilities. The administration utility preferably has the following basic features: an account maintenance feature, a reports maintenance feature, a vendor maintenance feature, a vendor product maintenance feature and a voice maintenance feature.

The account maintenance feature permits the system operator to edit user accounts and contact information.

The reports maintenance feature preferably contains a variety data entry reports which show which operator entered, or how many products an operator entered over a specified time period.

The vendor maintenance aspect permits the operator to add new vendors to the system, as well as the addition of information concerning the contacts and commission information for the particular vendor. Vendors can preferably be deleted or disabled and their product availability can be tagged as orderable, non-orderable, and visible or non-visible to the users. A disabled vendor preferably remains in the database but invisible to the user.

The vendor product maintenance section permits the updating of vendor pricing and quantity information.

The invoice maintenance form permits the creation of invoices that will be sent to the vendors. Preferred information includes vendor information, invoice number, from date and to date.

FIG. 53 shows a sample data entry report.

FIG. 54 shows a sample invoice.

FIG. 55 is a schematic representation of an on-line purchase and sale system 100 for conducting transactions in accordance with an illustrative embodiment of the invention.

The system 100 includes a Web site 102 having a public interface 104 that includes all operative functional characteristics except the quotes function and the data entry function. The quotes function and data entry function are contained in the private interface 106 associated with the Web site 102.

The Web site 102 is functionally linked by the software architecture to a customer service module 108 as well as to an administrative module 110.

The Web site 102, customer service module 108 and administrative module 110 together are linked by software code linkage (shown representationally by line 112 in FIG. 55) to the business module 118 by public interface 114. The public interface 114 interrelates with the private interface 116 (interface 116 being constituted by the underlying software code that interacts directly with the database 122) and the business module 118 is in turn functionally linked by software code linkage (shown representationally in FIG. 55 by line 120) to the database 122.

FIGS. 56-58 together constitute a schematic representation of the content of a dynamic database constructed to

carry out an on-line purchase and sale transaction in accordance with the method of the invention, in one embodiment thereof.

In the database structure shown in FIGS. 56-58, the presence of an empty diamond (\diamond) denotes the source of the information in the field, while the presence of a filled circle (\bullet) denotes the connection of the field value in the table with another table. The designation "(FK)" identifies a foreign key status of the information in the specific table, meaning that the specific field involved is referencing a primary index of another table.

It will therefore be seen that the database structure in FIGS. 56-58 is constructed of a number of tables. In the drawings of FIGS. 56-58, the tables are identified by a table name above the solid line box denoting the table and its contents. The contents of the respective tables are arranged in consecutive fields as shown.

As shown in FIG. 56, the database includes an Order Header table that includes an OrderHeader ID field providing an identifier for the order, and fields "Created On" to provide the date of the order, "Sales Tax" to identify the applicable state sales tax for the order transaction, "Shipping" to identify the shipping charges for the order transaction, "Total Amount" to identify the cost of the order, "LogonID (FK)" to specify the individual and/or group placing the order, "Quote Only" to designate the quotation character of the shopping basket contents in a non-purchase interaction, "All Commissions Paid" to denote the commission payment status of the transaction, "All Email Sent" to verify that electronic communications with the ordering party have been completed, and "Ship_ContactInfoID" to provide a number of the shipping documents accompanying the ordered goods when shipped to the purchaser.

The database includes a Credit Card Type table containing fields for "CreditCard Type ID" to provide an identifier for the purchaser, and "Description" to specify the particulars of the credit account.

The database also includes a Consumer Type table containing fields for "Consumer TypeID" to identify the type of purchaser (e.g., individual practitioner, dental group, dental teaching hospital, etc.), and "Description" and "Dentist" fields providing the particulars for the purchaser.

The "CreditCard Type" table is operatively linked to the "CreditCardInfo" table which includes fields for "CreditCard InfoID" to provide an identifier for the purchaser, "CreditCardTypeID (FK)" to specify the brand of credit account (e.g., MasterCard, VISA, American Express card, etc.), "Number" to provide the account number for the purchaser's credit account, and "Expiration Date" to provide the final date of the active account.

The "Consumer Type" table and the "CreditCardInfo" table are each interlinked with a "Consumer" table containing a "LogonID (FK)" providing the purchaser's identification, "ContactInfoID (FK)" to specify the contact person at the purchaser's organization, "CreditCardInfoID (FK)" to provide an identifier for the credit account of the purchaser, "Bill_ContactInfoID (FK)" to provide the name of the contact person of the purchaser organization for billing purposes, "Ship_ContactInfoID" to correspondingly specify the name of the contact person in the purchaser organization for shipping purposes in respect of the ordered goods and/or services, and "DentistInfoID (FK)" providing the identifier information for the purchaser's dental professionals.

The "Consumer LogonID (FK)" register is in turn interconnected with the "DentistInfoID" register, containing "Practice_ContactInfoID (FK)" denoting the purchaser's

organization's contact individual for information about the purchaser organization's practice, "StateLicense" providing the license/registration information for the practitioners in the purchaser's organization, "DEA" and "SSN" fields containing information about the specific practitioners affiliated with the purchaser's organization.

A "Vendor" table contains a "VendorID" field providing an identifier for the vendor. The fields in such table include "VendorName," providing the full business name of the vendor whose goods and/or services are offered at the Web site, "ContactInfoID (FK)" to provide the contact individual in the vendor's organization, "Bill_ContactInfoID (FK)" to specify the contact individual in the vendor organization who is responsible for billing issues, "Home Page" to specify the Universal Resource Locator (URL) or other identifier for the Web site of the vendor, that may be hyperlinked to the on-line shopping Web site, "Consumer Products" to identifier any goods and/or services in the consumer products category, "Commission Percentage" to specify the percentage commission applicable to purchase transactions consummated at the Web site that involve such vendor's products, "Active" and "Archived" to indicate the currently active or alternatively inactive status of the vendor, "OrderActive" to denote the status of any outstanding order transactions involving the vendor, and "BrowseActive" to denote the viewable character of the wares offered by the vendor at the on-line shopping Web site.

The database includes a "VendorProduct" table containing fields for "VendorProductID," "ManufacturerID (FK)," "VendorID (FK)," all relating to the identifiers for the parties to the transaction and the original equipment manufacturer (OEM) of the goods involved, "VendorProductCode" giving the identifier for the item or service involved, "DPOProductID (FK)" referring to the product identifier at the on-line shopping Web site, "CreatedOn," "CreatedBy_LogonID (FK)," "Approved," and "ApprovedBy_LogonID (FK)," to document the identity of the data entry party, and the approved character of the entry, "PhotoPath" to denote the graphic character of the entered information, "Active" and "Archived" to indicate current or historical character of the entered information, and "Detailed Description" to provide additional information about the product involved.

The "VendorProduct" table is connected to other tables including the "OrderLine" table, which includes various fields, comprising an "OrderLineID" identifier for the order transaction, "VendorProductID (FK)," and "OrderHeaderID (FK)" for identifiers for the product involved, and "Quantity," "PricePerUnit" and "Invoiced" to provide the quantity, unit price and billed character of the order transaction. The fields included in such table also include "EmailSent" to document the confirmed character of the transaction by electronic verification to the parties involved. Finally, the "Substitution" field indicates whether or not the purchaser allows substitutions to be made for the specific goods or services involved.

The "Price" table is at the lower left hand corner of the drawing in FIG. 56, and includes "VendorProductID (FK)" and "MinimumQuantity" fields to specify the vendor's product code and applicable minimum quantity that may be required for the sale of certain items offered at the on-line shopping Web site. The "Price" table also includes "Price," "Active" and "Archived" fields, to reflect the pricing, and the current or alternatively historical character of the pricing present in such table.

The "Brand" table contains the "BrandID" field and "ManufacturerID (FK)" field to identify the product brand name and the identifier for the manufacturer of the offered

product. The "Brand" table also includes "Description" and "Active" fields to further particularize the brand and the current status of the brand.

To the right of the "Brand" table is the "Manufacturer" table, containing the "ManufacturerID" field identifying the manufacturer of products offered at the Web site, together with the fields "Description" and "Active" providing additional information about the manufacturer as well as the current status of such manufacturer.

To the right of the "Manufacturer" table is the "Attribute" table, containing an "AttributeID" field listing the attributes for which values are set out in the operation of the Web site software, as well as the fields "Description" and "Active" providing additional information about the attributes as well as the current status of such attributes.

Immediately below the "Attribute" table is an "AttributeValue" table, which contains the field "AttributeValueID" as an attribute specifier of the values for each attribute, as well as the fields "Description" and "Active" providing additional information about the attribute values as well as the current status of such attribute values.

To the left of the "AttributeValue" table is the "DPODetail" table, containing the field "DPOProductID (FK)" denoting the identifier for the product code as used at the on-line shopping Web site, the field "OrdinalIndex" providing an indexed field of the product codes, the field "AttributeID (FK)" which provides an identifier for the attributes in the table, and the field "AttributeValueID (FK)" which provides a correlative identifier for the values associated with the attributes in the table.

Next adjacent (in the leftward direction) to the "DPODetail" table is the "DPOProduct" table, containing the field "DPOProductID" denoting the identifier for the product code as used at the on-line shopping Web site, the field "Description" providing a further specification of the product codes, the field "CreatedOn" which provides the date of entry of the data entries in the table, the field "CreatedBy__LogonID (FK)" to denote the data entry operator providing the input of data in the table, and the field "Active" to denote the current status or historical status of the information in the table.

At the bottom portion of FIG. 56 are order template tables, including "OrderTemplateLine" and "OrderTemplateHeader" tables. The "OrderTemplateLine" table includes a field for "OrderTemplateLineID" information as an identifier for the table information, the field "OrderTemplateHeaderID (FK)" as the identifier for information in the header of the template, a "VendorProductID (FK)" field for the vendor product codes of the products displayed for purchase at the Web site, and a "Qty" field relative to the specification of quantity information associated with the products purveyed at the Web site.

The "OrderTemplateHeader" table includes field "OrderTemplateHeaderID" for the identification of the template header for the order, the field "LogonID (FK)" for the identification of the user of the site, and the field "Description" for further information concerning the order template used at the Web site.

In FIG. 57, additional tables of the database structure are depicted, and include the LogonRecords" table, including a "CountID" field for tracking the specific frequency of interaction by the user with the Web site, a "LogonID (FK)" field containing the user identifiers comprising the logon identifiers, a "Time and Date" field containing historical information on the user's prior interactions with the database, a "RemoteHost" field specifying the remote host

computer involved in the interaction, a "RemoteIPAdd" field specifying the Internet protocol address for the remote user, and a "Status" field providing the category of the user reflecting prior or potential use of the Web site.

Immediately below the "LogonRecords" table is a "Shopping Cart" table, containing a "LogonID (FK)" field identifying the user of the Web site, a "VendorProductID (FK)" field containing the vendor codes for the purveyed products, and a "Qty" field reflecting the number of the product units in the Shopping Cart.

A "Logon" table is to the right of the "LogonRecords" table, and includes a field for "LogonID" containing the identifiers for the users of the Web site, a field for "Password" assigned for each user of the site, an "Active" field denoting the current or historical character of the user of the site, a "DataEntry" field relating to the information inputted for the shopping purchase and sale transactions, a "OrderProducts" field identifying the order information relating to the specific user, a "ConfirmProducts" field relating to confirmation information relative to the confirmation of orders placed by a user, an "Admin" field for the information relating to interaction with other administrative functions of the database, a "Note" field for information about the user, a "HeardFromCode" denoting the verification of contact by the Web site operator, and a "RegisterDate" field containing the information of the calendar date of registration at the Web site by a user.

The "ContactInfo" table is below the "Logon" table, and contains a "ContactInfoID" field for identifying the individual to be contacted at a user organization relative to transactions by the organization at the Web site. The fields included in such table for such organization include "FormOfAddress (FK)," "FirstName," "MiddleInitial," "LastName," "CompanyName," "BirthDate," "Email," "CountryID (FK)," "StateID (FK)," "City," "Address1," "Address2," "PostalCode," "PhoneAreaCode," "Phone," "PhoneExt," "FaxAreaCode," "Fax," "FaxExt," and "Note" fields, providing the contact information for the organization.

The database further includes a "TentativeProduct" table including fields relevant to potential products to be advertised at the Web site, including "TentativeProductID," "QueryString," "CreatedBy__LogonID (FK)," and "CreatedOn" fields therefor. Ancillary to such TentativeProduct table, there is provided a "TentativeProductReject" table, which includes various associated fields, of "TentativeProductID," "QueryString," "CreatedBy__LogonID (FK)," "CreatedOn," "RejectedOn," and "RejectedBy__LogonID" for processing new product listing queries and for rejecting same as unacceptable for inclusion in the database.

A "DataEntryRates" table is included in the database, with fields for "LogonID (FK)," "DPOProductRate," and "VendorProductRate." These fields address the rates for data entry that are applicable to inputted information.

A "ShipAddr" table is provided, which includes shipping information for products that are purchased at the Web site, including fields of "ShipAddrID," "LogonID (FK)," and "ContactInfoID (FK)."

A "FormsofAddress" table provides a "FormofAddress" field containing the contact addressing format for the database.

A "Country" table is included in the database, including fields of "CountryID" for respective country codes, and "Description" and "Active" fields for such country listings. A corresponding "State" table includes fields for "StateID," "Description," "Abbreviation," and "CountryID (FK)."

Next, a series of tables address administration of user interactions with the Web site. A "LogonPermissions" table includes fields for "LogonID (FK)," "PermissionID (FK)," and "Customer Service." A "Permissions" table includes fields for "PermissionID," followed by the number fields "One," "Two," "Three," "Four," "Five," and "Six," providing up to six individuals with ordering ability in the user organization.

A "Category" table includes "CategoryID" and "Description" fields relative to categories of users of the Web site.

Customer service functions are provided by the "CallTracking" table, relative to monitoring and responding to user contacts. The "CallTracking" table includes a multiplicity of fields: "CallTrackingID," "Consumer_LogonID (FK)," "Date," "CategoryID (FK)," "FollowUpRequired," "FollowUpDate," "FollowUpPerson," "FollowUpCompleted," "Notes," "Company," "Phone," "Fax," "Email," "Name," "FollowUp_CallTrackingID," "timestamp," "Consumer_LogonID," "TookCall_LogonID (FK)," and "LogonID (FK)."

An "UpdatePrices" table in the database accommodates revisions of pricing and minimum quantity criteria of the offered products, and includes the fields of "VendorProductCode," "MinimumQuantity," and "Price."

Referring now to FIG. 58, various order processing functional tables are included in the database, including a "ReptTransactionList" table (containing fields of "OrderHeaderID," "CreatedOn," "VendorID," "VendorName," "VendorProductCode," "Quantity," "PricePerUnit," "Invoiced," and "QuoteOnly"); a "RptInvoiceHeader" table (containing fields of "InvoiceNum," "InvoiceDate," "VendorID," "Inv_ContactInfoID," "TotalCommDue," "AmtReceived," "BalanceDue," and "PercentComm"); a "RptInvoiceLine" table (containing the fields of "InvoiceLineID," "InvoiceNum," "OrderHeaderID," "VendorProductCode," "Quantity," "UnitPrice," "SubTotal," "CommDue," and "OrderDate"); an "InvoiceHeader" table (containing the fields of "InvoiceNum," "InvoiceDate," "VendorID," "Inv_ContactInfoID," "TotalCommDue," "AmtReceived," "Balance Due," and "PercentComm"); an "InvoiceLine" table (containing fields of "InvoiceLineID," "InvoiceNum," "OrderHeaderID," "VendorProductCode," "Quantity," "UnitPrice," "SubTotal," "CommDue," and "OrderDate"); and an "InvoiceContactInfo" table (containing fields of "InvoiceContactInfoID," "InvoiceNum," "FormofAddress," "First Name," "Middle Initial," "LastName," "CompanyName," "BirthDate," "Email," "CountryID," "StateID," "City," "Address1," "Address2," "PostalCode," "PhoneAreaCode," "Phone," "PhoneExt," "FaxAreaCode," "Fax," "FaxExt," and "Note").

In operation, the database operates to provide the functionality previously described in connection with the graphical user interface screens and reports of FIGS. 1-54.

FIGS. 59-72 show various screens constituting graphical user interface output of a Web site software computer program according to another aspect of the invention, deriving from a Customer Service Utility module of such software program.

Customer Service Module

The look, feel, function, content and operation of the Customer Service Utility module will be readily apparent from the screens depicted in FIGS. 59-72.

The customer service utility preferably has a main menu page. FIG. 59 shows an exemplary main menu page which permits the operator to open the "customer call tracking" function, the "required calls" function, and the "manager" functions, as well as permitting the operator to exit the program.

The customer service utility preferably has a customer call tracking function. The customer call tracking function can be divided into areas such as administration, billing function and shipping function.

The administrative function preferably includes administrative information such as the user's log-on identification and password, name, form of address, birthday, e-mail address, company, telephone, facsimile, address, city, state, postal code, country, as well as fields for entering information such as when the last time the user was contacted and for entering any miscellaneous notes. The administrative function preferably references a database and the database is preferably searchable on various fields within the administrative function, such as log-on identification, name, e-mail address, company, telephone, facsimile, or postal code, in order to facilitate various customer service searches. A preferred customer call-tracking screen is displayed in FIG. 60.

The customer call tracking function also preferably has a billing function. The billing function preferably contains fields such as the customer name, form of address, birth date, e-mail address, company, telephone, facsimile, address, city, state, postal code, country, and a field for various notes. A preferred customer call-tracking screen, which interfaces with the customer service database, is illustrated in FIG. 61.

The customer service utility also preferably includes a shipping function, which permits the customer service operator to view information from the customer service database, including fields such as name, form of address, birth date, e-mail address, company, telephone, facsimile, city, state, postal code, country, as well as a field for entering various notes. Furthermore, the customer call tracking shipping function preferably contains a means for switching between various shipping addresses used by single customers. For example, any particular customer may have multiple shipping addresses, and the customer call tracking shipping function preferably permits the customer service operator to toggle between such addresses as necessary.

Each of the customer call tracking functions, such as administrative billing and shipping functions are preferably accessible from a single customer call tracking generalized screen, as shown in FIG. 62. The access to the various administrative billing and shipping areas can be via a virtual tab system, whereby the user can select various tabs located across the top of the customer call tracking window in order to access the various customer call tracking functions. Furthermore, the customer call tracking function preferably contains a means for permitting the user to access screens for entering new calls, for viewing old calls, for entering or editing credit card information, and for entering or editing dentist information.

FIG. 63 shows a call detail screen which is accessible from any of the customer call tracking function screens, and which permits the customer service operator to enter a call description, as well as permitting the customer service operator to enter reminder information for following up on the customer contact. The follow-up information is stored in the database where it can be accessed from various screens in the system, such as the call list screen in order to track the record of customer contacts. Once the customer service operator enters the call description, the record can then be saved by accessing a save function, such as by pressing the virtual save button as shown in FIG. 63. The call details screen also preferably has fields for information such as the operator who took the call, the log-in identification of such operator, the date of the call, the name of the customer being called, the company of the customer being called, the

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telephone number of the customer being called, the facsimile number of the customer being called, and the e-mail address of the customer being called. The call details customer tracking function may also be provided with a means for instructing the computer to dial the customer's telephone number.

FIG. 64 shows an exemplary call list for a specific user which is accessible from any of the customer call tracking windows, preferably by pressing a virtual button, such as the view calls button of FIG. 62. The call list preferably contains information such as the name, the contact date, whether follow-up has been performed, and which customer service operator received the call. The customer call tracking screen also preferably enables the customer service operator to access the customer's credit card information, such as by pressing a virtual button, such as the "credit card info" virtual button as shown in FIG. 65. FIG. 65 also shows an exemplary credit card information pop-up window according to the present invention which contains information such as card type, card number and expiration date.

The customer call tracking screen also preferably permits the user to access any special information concerning the customer which is specific to the customer's field, for example, the users have implemented a system according to the present invention for the sale of dental equipment, and accordingly, the customer call tracking screen in such circumstances preferably includes a screen for displaying dentist information from the database, including fields such as State License number, D.E.A. number, and Social Security number, as shown in FIG. 66.

The system also preferably includes a means for permitting the customer service operator and/or the customer service manager to access the information contained in the database in order to provide a list of required calls for the customer service department or for any particular customer service representative. Such a call list can serve as a task list for a particular customer service representative or a quality control list for a customer service manager, in order to determine what calls are being made and what calls need to be made. An exemplary required calls listing a series of all required calls or a number of customer service representatives is illustrated in FIG. 67.

The customer service utility also preferably includes a customer service management function. The customer service management function is preferably accessible from the customer service utility main menu. The customer service administrative management function preferably permits the customer service manager to manage log-in permissions for various customer service personnel, including a means for determining which information the customer service personnel can read and which information the customer service personnel can edit.

Various fields, which are preferably controllable by the customer service manager using the customer service manager function, include contact information, calls, credit card information and manager access. For example, any particular customer service representative may be permitted to read contact information but not to edit contact information. For another example, any particular user may be permitted to read credit card information, but not to edit credit card information. An exemplary customer service administrator window is illustrated in FIG. 69.

The customer service manager function of the customer service utility also preferably includes a means by which the customer service manager can view various planned follow-up calls and edit such calls and/or reassign such calls to various other customer service representatives. An exem-

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plary program window, which permits the customer service manager to manage calls according to the present invention, is illustrated in FIG. 70.

Throughout the present specification the applicants have made various references to accessing programs, linking to various programs, linking to various functions, performing various functions, etc. It will be readily understood by one of skill in the art that these various operations are generally performed by a wide variety of software mechanisms including, for example, virtual buttons, virtual tabs, function buttons, and other various means known in the art. Furthermore, it will be appreciated that throughout the drawings, various virtual buttons and/or virtual tabs, and/or fields are displayed. The functions of such virtual buttons, virtual tabs, and/or fields are generally ascertainable by one of skill in the art simply by observing the Figures. Further, the virtual buttons, in particular, contain a variety of standard buttons including close buttons, save buttons, exit buttons, cancel buttons, and others which are generally used and are known in the art.

In another aspect of the present invention, the applicants provide a method for establishing a database structure and populating such a database structure with a series of standardized product descriptors which can be used by a user/customer to identify and compare various products within a particular product category. According to the method, information is collected concerning a product population, and products are compared by individuals knowledgeable in the field, to establish a list of the minimum necessary attributes needed to identify any particular product. Such attributes may vary according to the complexity of the product, and this is one of the major advantages of the present system and database. A category-attribute chain by which the user can by making attribute selections at each level of the category-attribute chain arrive at a final product group. The final product group can then be displayed in a grid or other format which permits the user to compare the prices of like products. Once the category-attribute chain is established, a minimum number of products can be entered within a particular category in order to encompass all product types within that category. These products can then be checked for accuracy, and upon approval, the database can be populated with all products in each category-attribute chain group.

FIG. 73 is a schematic representation of a relational product entry procedure for existing and/or new vendors, to input product information and to ensure its quality. As shown, a "Vendor Catalog" is a source of product information that is subjected to data identification scrutiny by the vendor as well as the in-house staff of the Web site operator. The identified data then is passed to an in-house staff of the Web site operator for data preparation, by which is meant the formulation of the data in a form that is amenable to input in the database of the Web site software system.

Data entry and approval is then carried out by collateral teams of individuals (denoted "Team 1," "Team 2," and "Team 3," respectively) to ensure the accuracy of the data entry process. Finally, the entered data is subjected to quality assurance scrutiny by the quality assurance team of the Web site operator.

FIG. 74 is a relational depiction of a category creation procedure for remaining sub-categories, as carried out to establish a database structure and populate it in such a way that products can be easily and logically identified by the majority of Web site users.

In this procedure, various Levels are established for the category definition effort. Level 3 activity is the creation of the structure, viz., the establishment of a category structure

and documentation of industry nuances that are specific to the particular goods and/or services being categorized. Level 2 activity is data entry activity, and relates to building a database structure established by Level 3. Level 1 activity is data entry, involving populating the database established by Level 2. Level 0 activity is quality assurance, relating to verification of the sub-categories and the vendor information completeness.

These various Level 0-3 activities are shown in FIG. 74, for an illustrative example involving about 200 categories. Successive teams are involved in the respective steps, as illustrated.

It will be appreciated that the database may be constructed, arranged, operated and constituted in a wide variety of different forms. In addition, it will be appreciated that the appearance and visual aspect of the screens shown to the user in operation of the Web site software may be correspondingly varied to provide a look and feel character that is widely variable. Further, the content of the database may be correspondingly varied dependent on the nature and types of products and/or services that are purveyed at the Web site.

Although the invention has been described with respect to various illustrative embodiments, features and aspects, it will be appreciated that the utility of the invention is not thus limited, but rather extends to and includes various other modifications, alterations and other embodiments, as will readily suggest themselves to those of ordinary skill in the art based on the disclosure herein. The invention is therefore intended to be broadly construed, as encompassing all such modifications, alterations and other embodiments within the spirit and scope of the ensuing claims.

What is claimed is:

1. A searchable database system for generating a product comparison grid for a selected target search item, comprising:

a database embodied in a computer readable medium, the database including a multiplicity of target search items, the target search items having assigned attributes and at least one related value for each attribute;

a computer with a display device operatively connected to the database for displaying selections by user wherein the database provides to the display device only one attribute level at a time with its related values and the selection of a value for the displayed attribute determines the next displayed attribute level and wherein the comparison grid is generated only after a series of steps including:

the user selects a target search item and the database provides for display of a single first level attribute and at least one value related to the attribute;

the user selects a value for the first level attribute, and the value chosen determines the next level attribute displayed to the user, the next level attribute having at least one related value;

the attribute display and value selection process is repeated until a value is selected for each sequentially displayed attribute to generate an attribute-chain which includes the selected value for each attribute assigned to the selected target search item in the database; and

the completion of the attribute-value chain prompts the construction and display of the comparison grid for products having the selected values, wherein the database system provides at least one product in the comparison grid of products specifying the target search item and precluding an indeterminate search result, and

wherein the comparison grid of products is formed only after a value has been specified for each of the attributes displayed.

2. The searchable database of claim 1, wherein said computer readable medium is selected from the group consisting of: CD-ROMs, magnetic disks, magnetic tape, magnetic drums, electronic memory, ferroelectric memory, and combinations thereof.

3. The searchable database of claim 1 wherein the target search items comprise products.

4. The searchable database of claim 1 wherein the target search items comprise services.

5. The searchable database of claim 1 wherein the target search items comprise dentistry products.

6. The searchable database of claim 1 wherein the target search items comprise medical products.

7. The searchable database of claim 1, operatively resident in a programmable computer.

8. The searchable database of claim 7 wherein said computer network comprises the World Wide Web.

9. The searchable database of claim 1 operatively connected to a computerized user interface system.

10. The searchable database of claim 9 wherein the computerized user interface system comprises a persistent shopping cart.

11. The searchable database of claim 9 wherein the computerized interface system comprises an attribute-value chain search capability.

12. The searchable database of claim 9 wherein the computerized interface system comprises a selectable display of user history involving said target search items.

13. The searchable database of claim 9 wherein the computerized interface system comprises a custom order template.

14. A computer network-based online comparison shopping system containing product selection information for products from different sources, comprising:

(i) a searchable database embodied in a computer readable medium operatively connected to a computer with a display device wherein the database comprises target search items, the target search items having assigned attributes and at least one related value for each attribute and wherein a comparison grid setting forth product information for products from different sources is generated only after a series of steps including:

the user select a target search item and the database provides to the display device only the first attribute level with its related values;

the user selects a value for the first level attribute, and the value chosen determines the next level attribute displayed to the user, the next level attribute having at least one related value;

the attribute display and value selection process is repeated until a value is selected for each sequentially displayed attribute to generate a attribute-value chain which includes the selected value for each attribute assigned to the selected target search item and which prompts the construction of a comparison grid of said products and precluding an indeterminate search result, wherein the comparison grid of products is formed only after a value has been specified for each of the displayed attributes; and

(ii) a computerized user interface operatively coupled to said database for user manipulation thereof to select product(s) based on product selection information and constructed and arranged to communicate ordering information to source(s) of selected product(s).

15. The online comparison shopping system of claim 14, wherein said computer readable medium is selected from the group consisting of: CD-ROMs, magnetic disks, magnetic tape, magnetic drums, electronic memory, ferroelectric memory, and combinations thereof.

16. The online comparison shopping system of claim 14 wherein the target search items comprise products.

17. The online comparison shopping system of claim 14 wherein the target search items comprise services.

18. The online comparison shopping system of claim 14 wherein the target search items comprise dentistry products.

19. The online comparison shopping system of claim 14 wherein the target search items comprise medical products.

20. The online comparison shopping system of claim 14 wherein said computer network comprises the World Wide Web.

21. The online comparison shopping system of claim 14 wherein the searchable database is operatively coupled to software providing order capability for purchase and sale transaction of said products.

22. The online comparison shopping system of claim 14 wherein the computerized user interface system comprises a persistent shopping cart.

23. The online comparison shopping system of claim 14 wherein the computerized interface system comprises an attribute-value chain search capability.

24. The online comparison shopping system of claim 14 wherein the computerized interface system comprises a selectable display of user history involving said target search items.

25. The online comparison shopping system of claim 14 wherein the computerized interface system comprises a custom order template.

26. The online comparison shopping system of claim 14, further comprising at least one of the tables selected from the group consisting of OrderHeader table, CreditCardType table, ConsumerType table, CreditCardInfo table, Consumer table, DentistInfo table, Vendor table, OrderLine table, VendorProduct Table, Price Table, Brand table, Manufacturer table, DPODetail table, DPOProduct table, OrderTemplateLine table, OrderTemplateHeader table, LogonRecords table, ShoppingCart table, Logon table, ContactInfo table, TentativeProduct table, TentativeProductReject table, DataEntryRates table, ShipAddr table, FormOfAddress table, Country table, State table, LogonPermissions table, Permissions table, Category table, CallTracking table, UpdatePrices table, ReptTransactionList table, InvoiceHeader table, InvoiceLine table, ReptInvoiceHeader table, ReptInvoiceLine table, and InvoiceContactInfo table.

27. The online comparison shopping system of claim 14, further comprising an OrderHeader table, a CreditCardType table, a ConsumerType table, a CreditCardInfo table, a Consumer table, a DentistInfo table, a Vendor table, an OrderLine table, a VendorProduct Table, a Price Table, a Brand table, a Manufacturer table, a DPODetail table, a DPOProduct table, an OrderTemplateLine table, an OrderTemplateHeader table, a LogonRecords table, a ShoppingCart table, a Logon table, a ContactInfo table, a TentativeProduct table, a TentativeProductReject table, a DataEntryRates table, a ShipAddr table, a FormOfAddress table, a Country table, a State table, a LogonPermissions table, a Permissions table, a Category table, a CallTracking table, and an UpdatePrices table.

28. The online comparison shopping system of claim 27 wherein the searchable database further comprises a ReptTransactionList table, an InvoiceHeader table, an InvoiceLine table, a ReptInvoiceHeader table, a ReptInvoiceLine table, and an InvoiceContactInfo table.

29. The online comparison shopping system of claim 14 further comprising means for quote generation for a potential transaction identified by a user.

30. The online comparison shopping system of claim 29 wherein the quote is saved in a user history archive.

31. The online comparison shopping system of claim 29 wherein the quote is automatically e-mailed to a user.

32. The online comparison shopping system of claim 14 wherein the user interface comprises search means having search capabilities selected from the group consisting of category searching, vendor searching, brand searching, manufacturer searching, code searching, index searching, and order history searching.

33. A computerized online comparison shopping system comprising:

(i) a searchable database embodied in a computer readable medium containing product information of multiple vendors, manufacturers and/or products, the searchable database operatively connected to a computer with a display device and comprising a multiplicity of target search items, the target search items having assigned attributes and at least one related value for each attribute wherein a user of the online comparison shopping system selects a target search item and the database provides to the display device only the first attribute level with its related values;

the user selects a value for the first level attribute, and the value chosen determines the next level attribute displayed to the user, the next level attribute having at least one related value;

the attribute display and value selection process is repeated until a value is selected for each sequentially displayed attribute to generate a attribute-value chain which includes the selected value for each attribute assigned to the selected target search item and which prompts the construction of a comparison grid specifying said products and precluding an indeterminate search result, wherein the comparison grid of products is formed only after a value has been specified for each of the attributes displayed; and

(ii) a computerized user interface generating a virtual shopping cart, and constructed and arranged to enable a user to selectively aggregate an order in said virtual shopping cart, comprising products represented in said database, and means for electronically disaggregating said order to generate vendor-specific orders to respective vendors.

34. The online comparison shopping system of claim 33 further comprising means for electronically transmitting said vendor-specific orders to said respective vendors.

35. The computer network-based on-line comparison shopping system according to claim 14 further comprising:

a Web site having a public interface and a private interface, wherein the public interface includes all operative functional characteristics except quotes function and data entry function, and wherein the private interface includes quotes function and data entry function;

a customer service module functionally connected to said Web site via software architecture;

an administrative module functionally connected to said customer service module via software architecture;

a business module having a public interface and a private interface, wherein the public interface of said business module is functionally connected to the Web site, the customer service module, the administrative module

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via a software code linkage, and wherein the private interface interrelates with the private interface; and a database functionally connected to said business module via a software code linkage and directly interacting with the private interface of said business module.

36. A method of conducting electronic commerce involving online comparison shopping comprising:

providing a searchable database embodied in a computer readable medium and operatively connected to a computer with a display device, the searchable database containing product information of multiple vendors, manufacturers and/or products and comprising a multiplicity of target search items, the target search items having assigned attributes and at least one related value for each attribute;

providing access to the database by a user wherein the user selects a target search item and the database provides to the display device only a first level attribute with its related values, the user selects a value for the first level attribute, and the value chosen determines the next level attribute displayed to the user, the next level attribute having at least one related value;

the attribute display and value selection process is repeated until a value is selected for each attribute sequentially presented to the user to generate a attribute-value chain which includes the selected value for each attribute assigned to the selected target search item and which prompts the construction of a comparison grid specifying said products and precluding an indeterminate search result, wherein the comparison grid of products is formed only after a value has been specified for each of the attributes displayed; and

manipulating a computerized user interface to generate a virtual shopping cart to selectively aggregate an order in said virtual shopping cart, comprising products represented in said database, and electronically disaggregating said order to generate vendor-specific orders to respective vendors.

37. The method of claim 36 further comprising electronically transmitting said vendor-specific orders to said respective vendors.

38. A dynamically generated database embodied in a computer readable medium and operatively connected to a computer with a display device for storing and searching product information of multiple products, the database comprising searchable products, wherein each searchable product has attributes assigned thereto; an Attributes table, wherein each attribute is located on a different level in the table and access to the next level can only be gained by selection of a related value for the current displayed level attribute; a Values table comprising the values related to each level of attributes, a DPO Detail table, and a DPO Product table, wherein selection of values for each attribute level that is sequentially presented generates a attribute-value chain which prompts the construction of a comparison grid specifying a particular product and precluding an indeterminate search result, and wherein all the possible attribute-value chains are stored in the DPO Detail table and respectively supplemented by description information stored in the DPO Product table.

39. The dynamically generated database of claim 38, wherein potentially unlimited number of attributes can be assigned to each product.

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40. The dynamically generated database of claim 38, wherein the number of levels of each attribute-value decision tree depends on the number of attributes necessary to be assigned to the specified particular product to fully distinguish such product from other products.

41. The dynamically searchable database of claim 38, operatively resident in a programmable computer.

42. The dynamically searchable database of claim 41, wherein said programmable computer is operatively coupled to a computer network.

43. The dynamically searchable database of claim 42, wherein said computer network comprises the World Wide Web.

44. The dynamically searchable database of claim 38, operatively connected to a computerized user interface system.

45. The dynamically searchable database of claim 44, wherein the computerized user interface system comprises means for the users to sort multiple selected attribute-value decision tree by any one attribute.

46. The dynamically searchable database of claim 38, further comprising means for generating vendor-specific orders for selected products and electronically communicating such orders to respective vendors.

47. The computer network-based on-line comparison shopping system of claim 46, further comprising at least one module selected from the group consisting of a data entry module, a customer service module, and an administrative utility module.

48. The computer network-based on-line comparison shopping system of claim 46, comprising a data entry module.

49. The computer network-based on-line comparison shopping system of claim 48, wherein said data entry module comprises means for entering product information by individual vendors and/or manufacturers, means for approving the product information by others, and means for admitting the product information into the dynamically generated database subsequent to such approval.

50. The computer network-based on-line comparison shopping system of claim 48, wherein said data entry module enables individual vendors and/or manufacturers to categorize new products by attribute-value constructs comprising a series of correlated attributes and values.

51. The computer network-based on-line comparison shopping system of claim 50, wherein said data entry module enables individual vendors and/or manufacturers to select existing attributes and values in the database or add new attributes and values.

52. The computer network-based on-line comparison shopping system of claim 46, wherein the database further comprises at least one selected from the group consisting of a Vendor Product table, a Vendor table, a Brand table, a Manufacturer table, and a Price table.

53. The computer network-based on-line comparison shopping system of claim 38, wherein the comparative selection grid can be sorted by any columns selected by user.

54. The computer network-based on-line comparison shopping system of claim 46, further comprising a persistent shopping cart.

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

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APPLICATION NO. : 09/234348
DATED : September 12, 2006
INVENTOR(S) : Patrick Cassidy et al.

Page 1 of 1

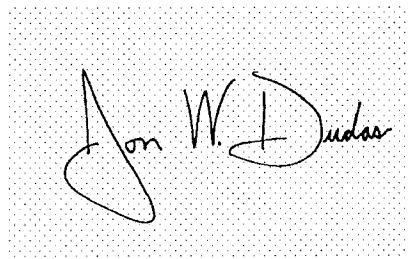
It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Title page Item [75], in the identification of Inventors, "James Evans, Cary, NC (US)" should be -- James Evans, Apex, NC (US) --

In column 12, line 27, "with in" should be -- within --

Signed and Sealed this

Thirtieth Day of January, 2007

A handwritten signature in black ink on a light gray dotted background. The signature is written in a cursive style and reads "Jon W. Dudas".

JON W. DUDAS

Director of the United States Patent and Trademark Office



US007043471B2

(12) **United States Patent**
Cheung et al.

(10) **Patent No.:** **US 7,043,471 B2**
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(54) **SEARCH ENGINE ACCOUNT MONITORING**

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(58) **Field of Classification Search** **707/2-5, 707/10, 100; 705/40, 35, 1, 14, 10, 37, 26; 713/200**

See application file for complete search history.

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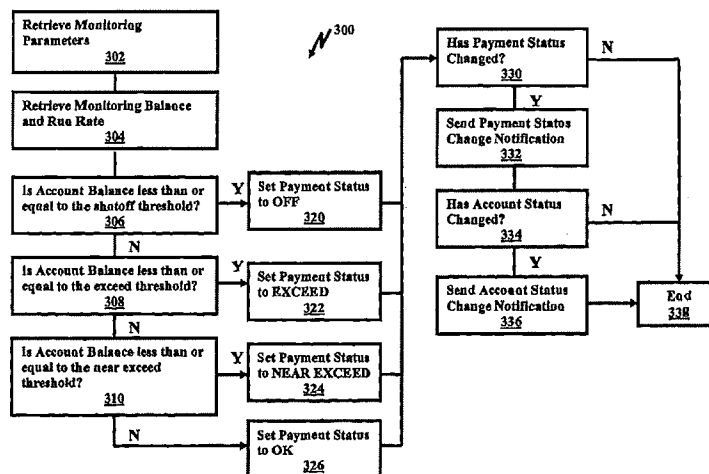
Primary Examiner—Cam-Y Truong

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(57) **ABSTRACT**

A system and method of generating an ordered search list via a search engine by determining various account balances to determine where a search listing will appear, if at all, in a search results list. If a web site advertiser's account is below a threshold, the search listing associated with the advertiser will not appear in the search list. Various balances may be used. Some of the balances may be closer to real-time balances and others may be more accurate, for example by removing certain event charges that were later determined to be non-chargeable. By using and monitoring the various account balances, the search engine prevents over-delivery of advertising through search result listings and possible over-billing of the advertisers.

25 Claims, 9 Drawing Sheets



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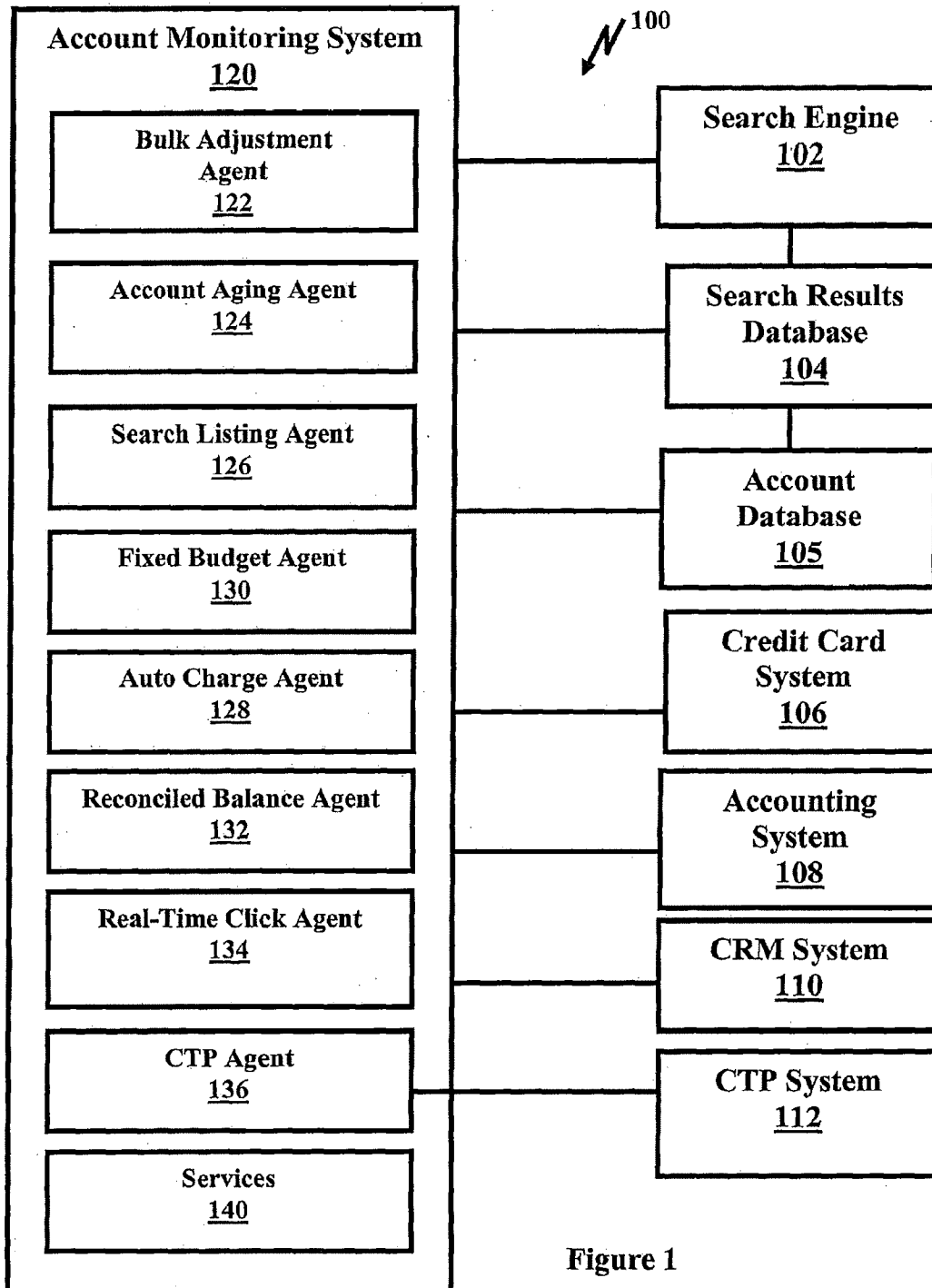


Figure 1

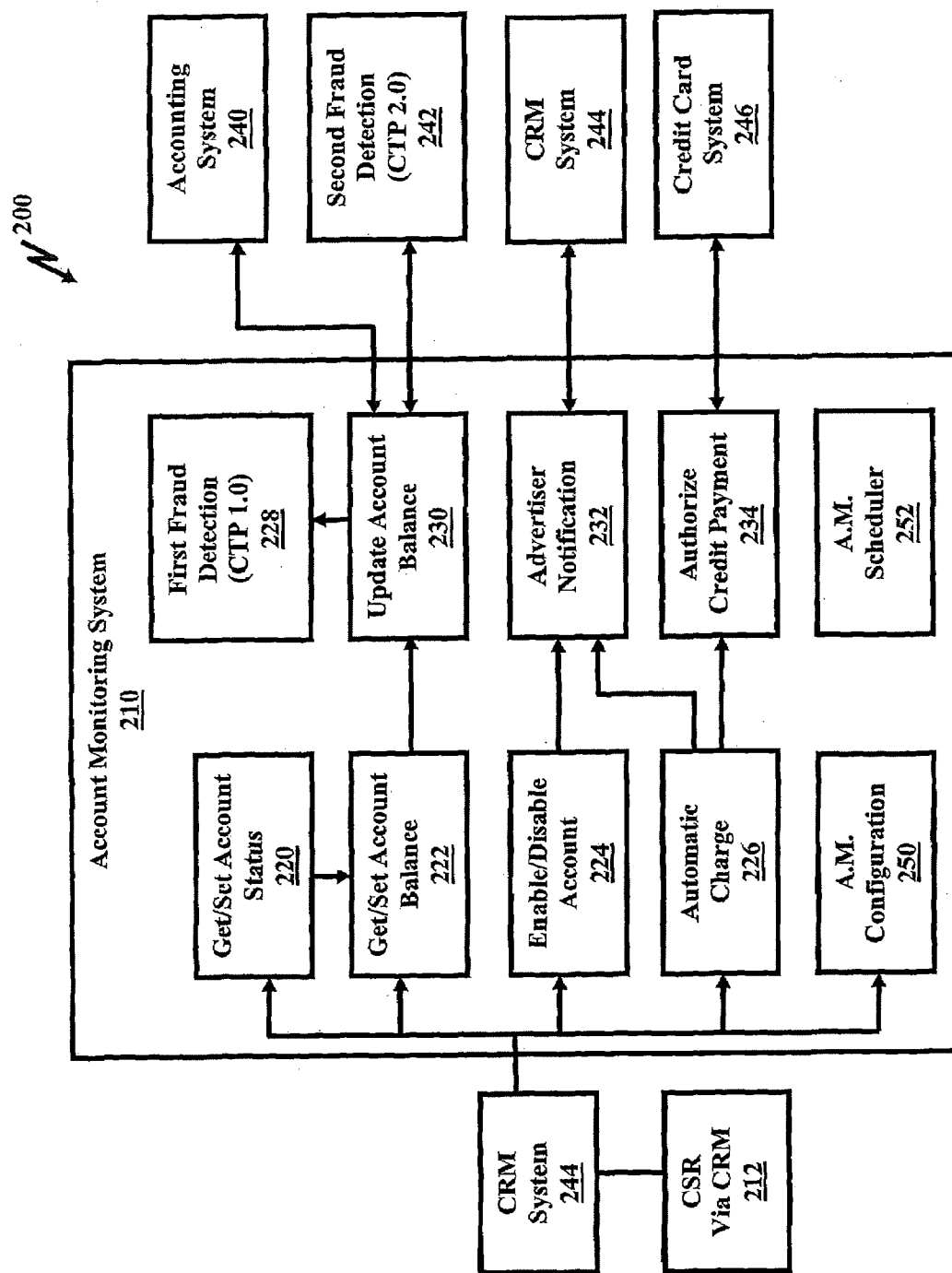


Figure 2

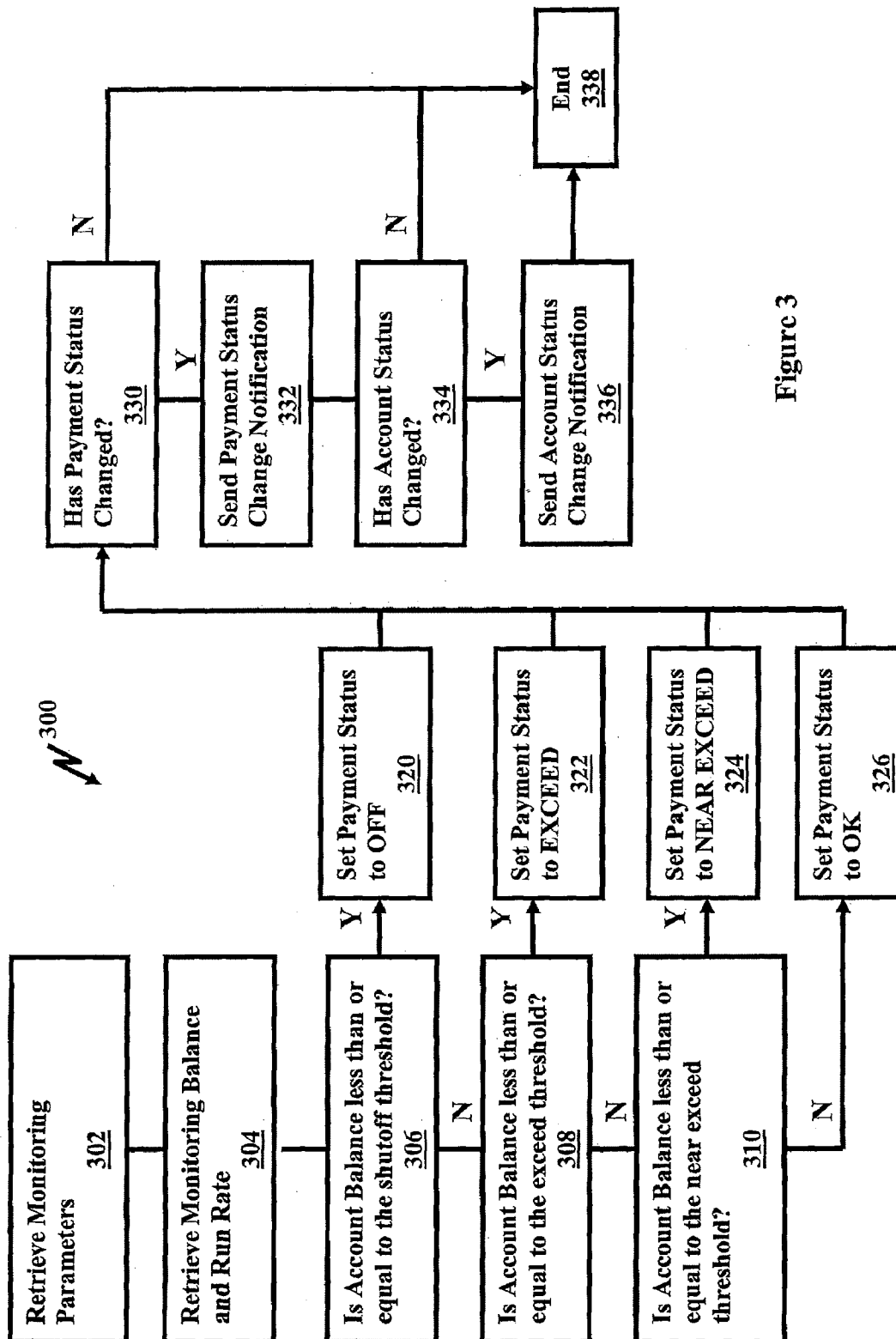


Figure 3

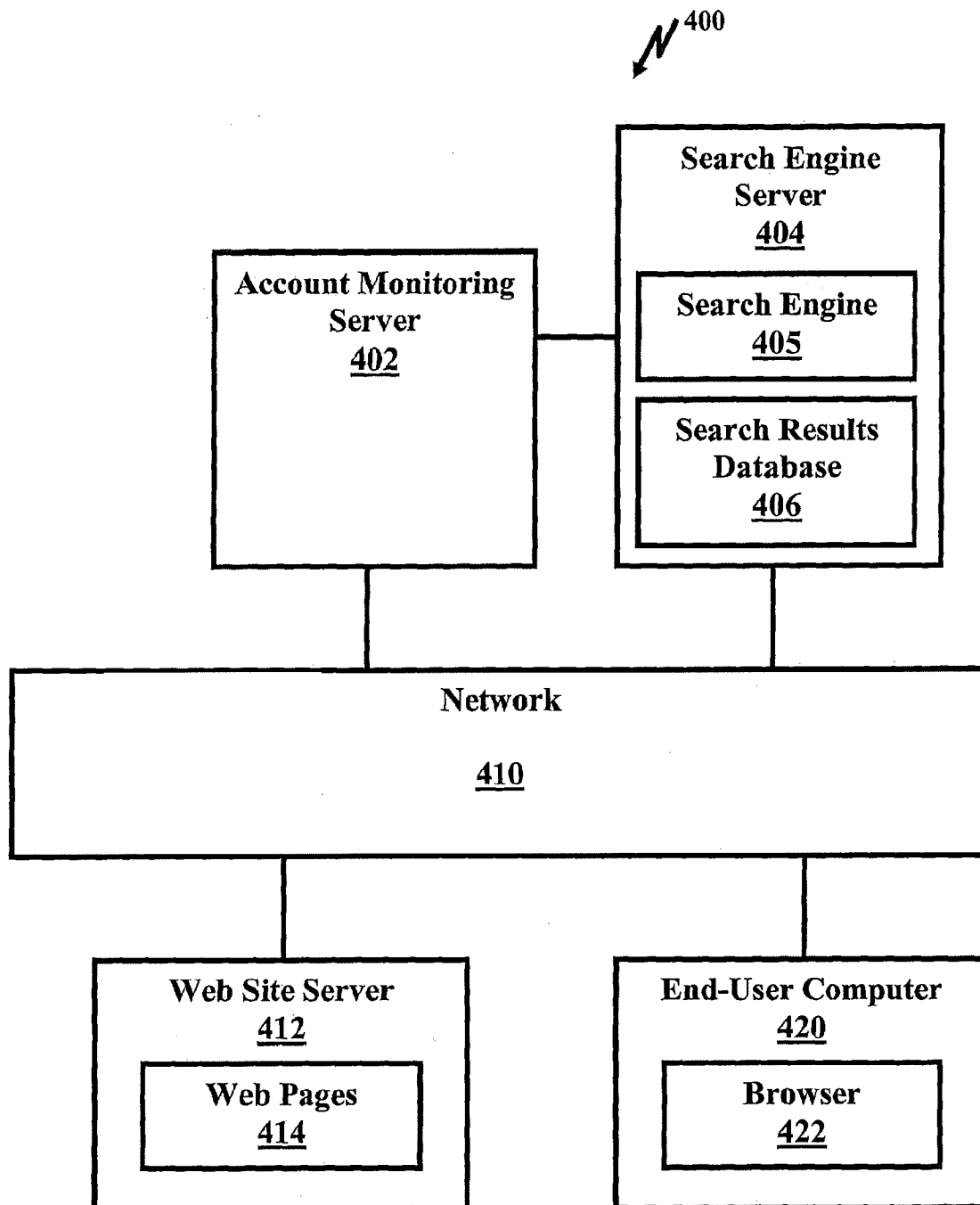


Figure 4

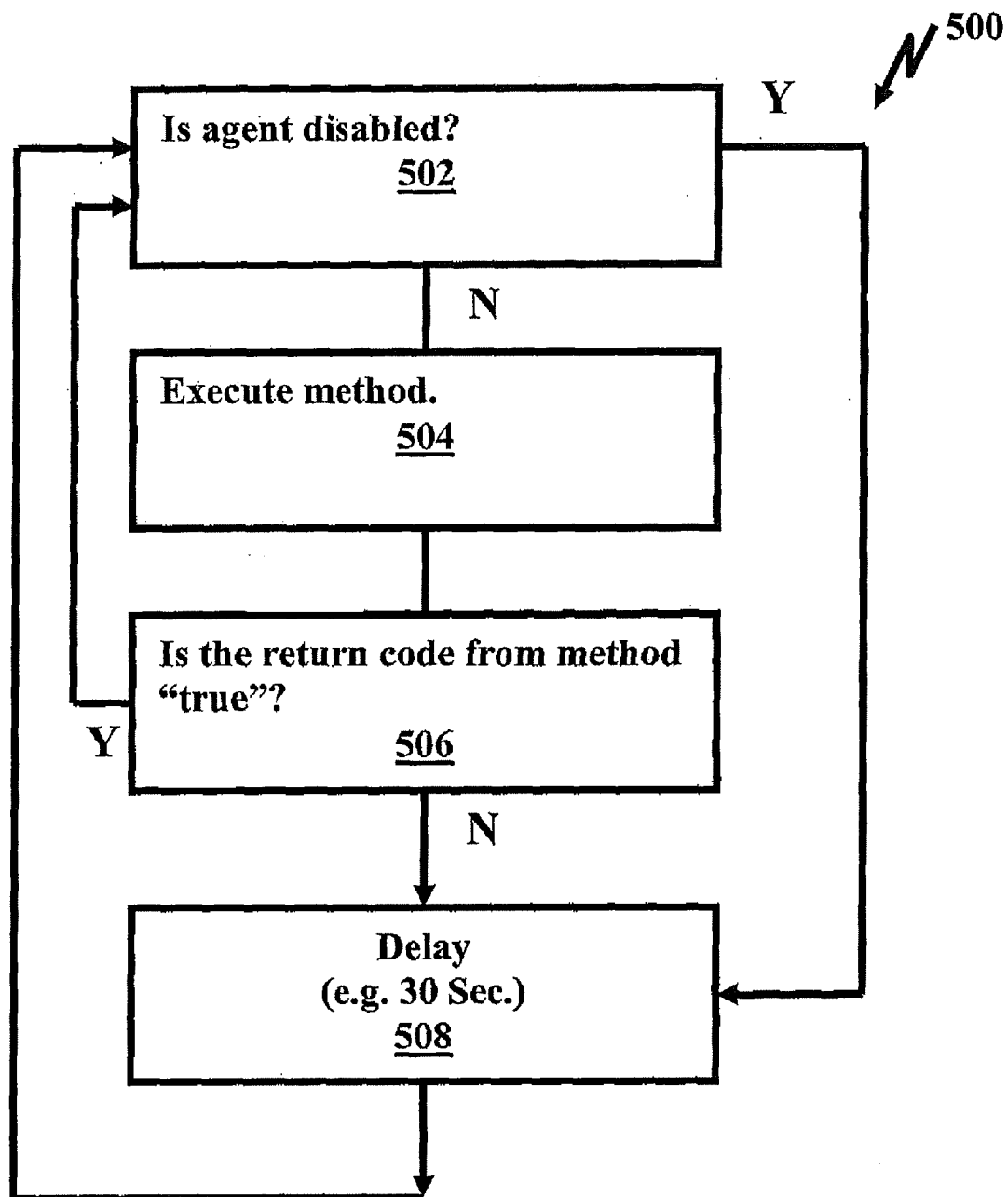


Figure 5

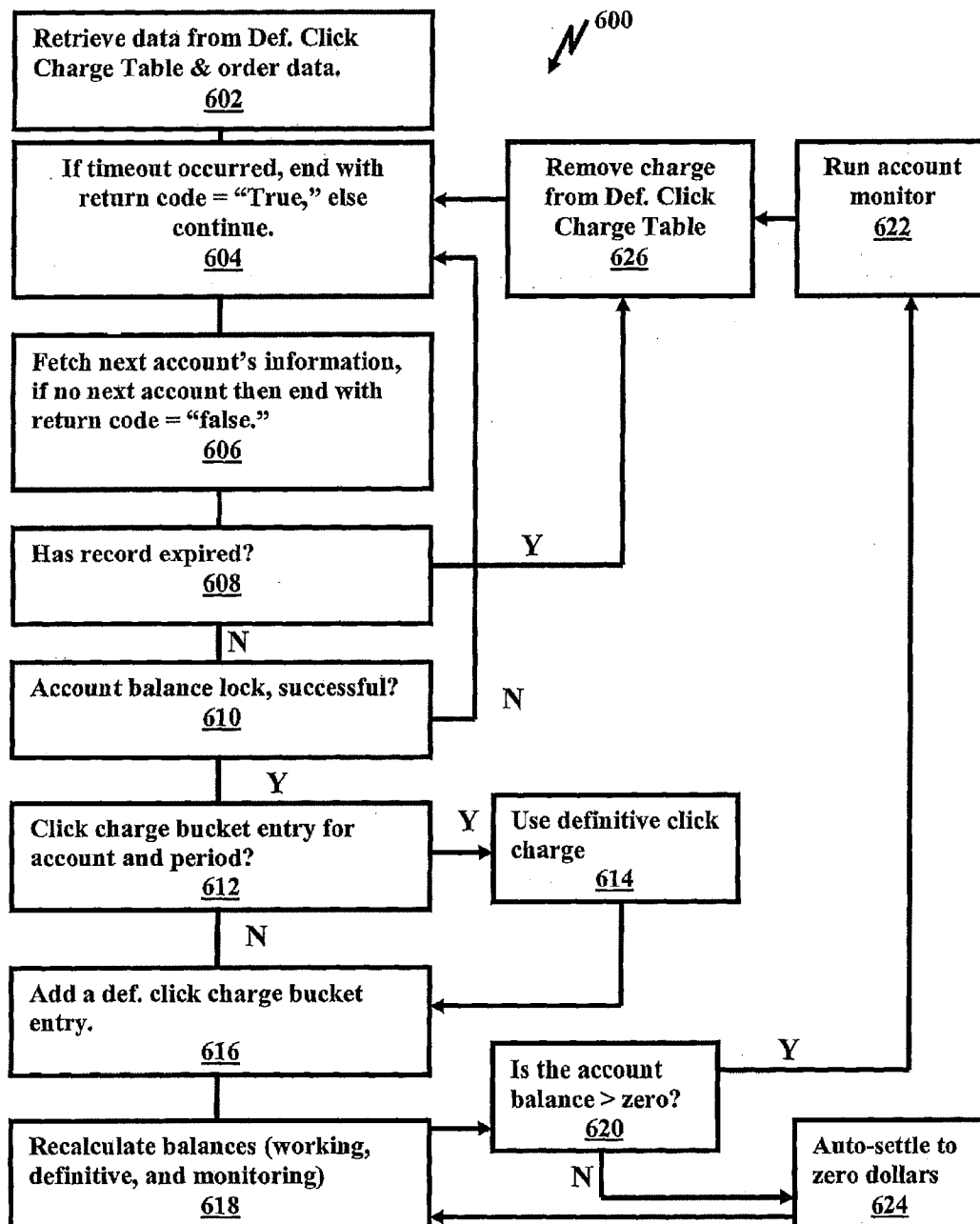


Figure 6

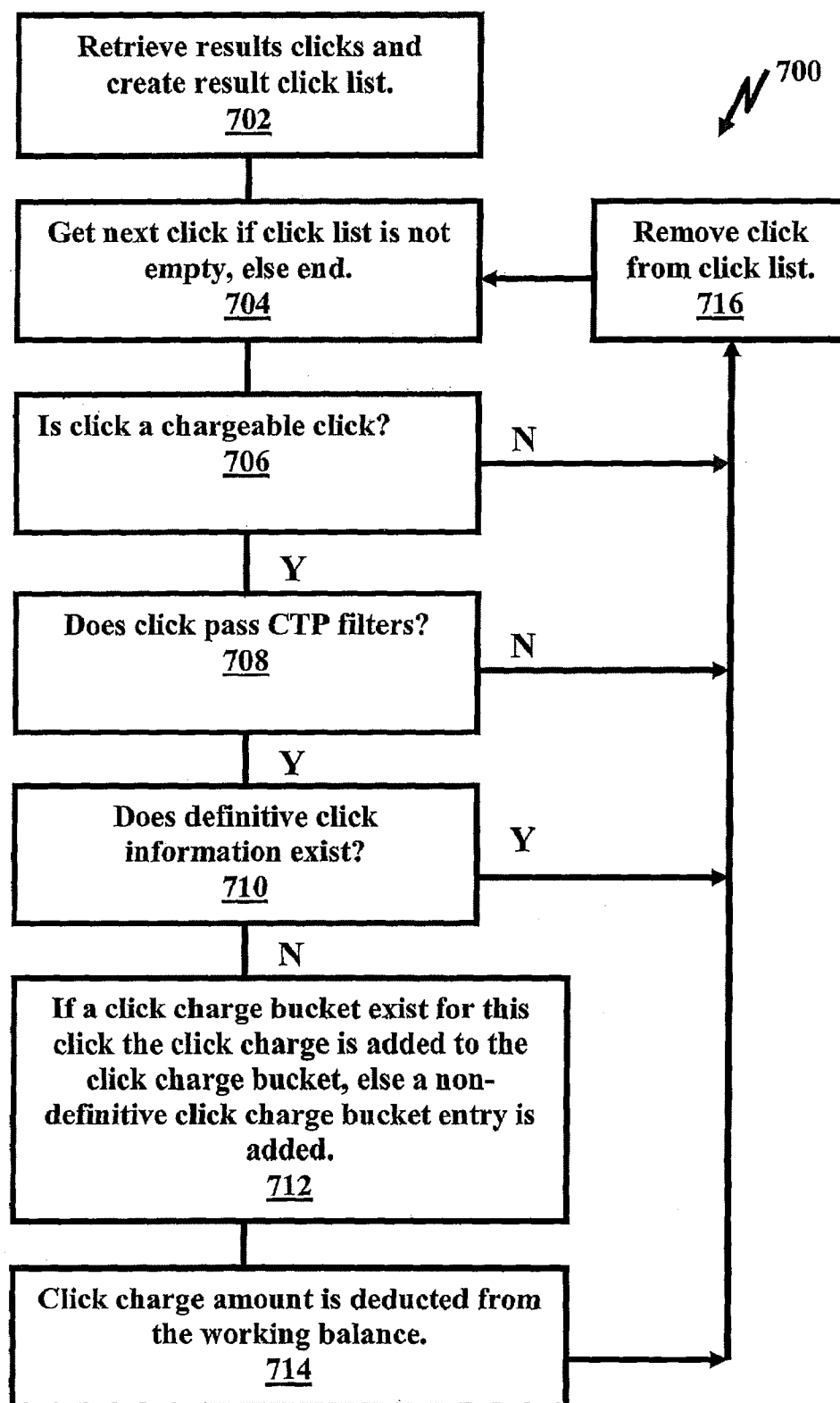


Figure 7

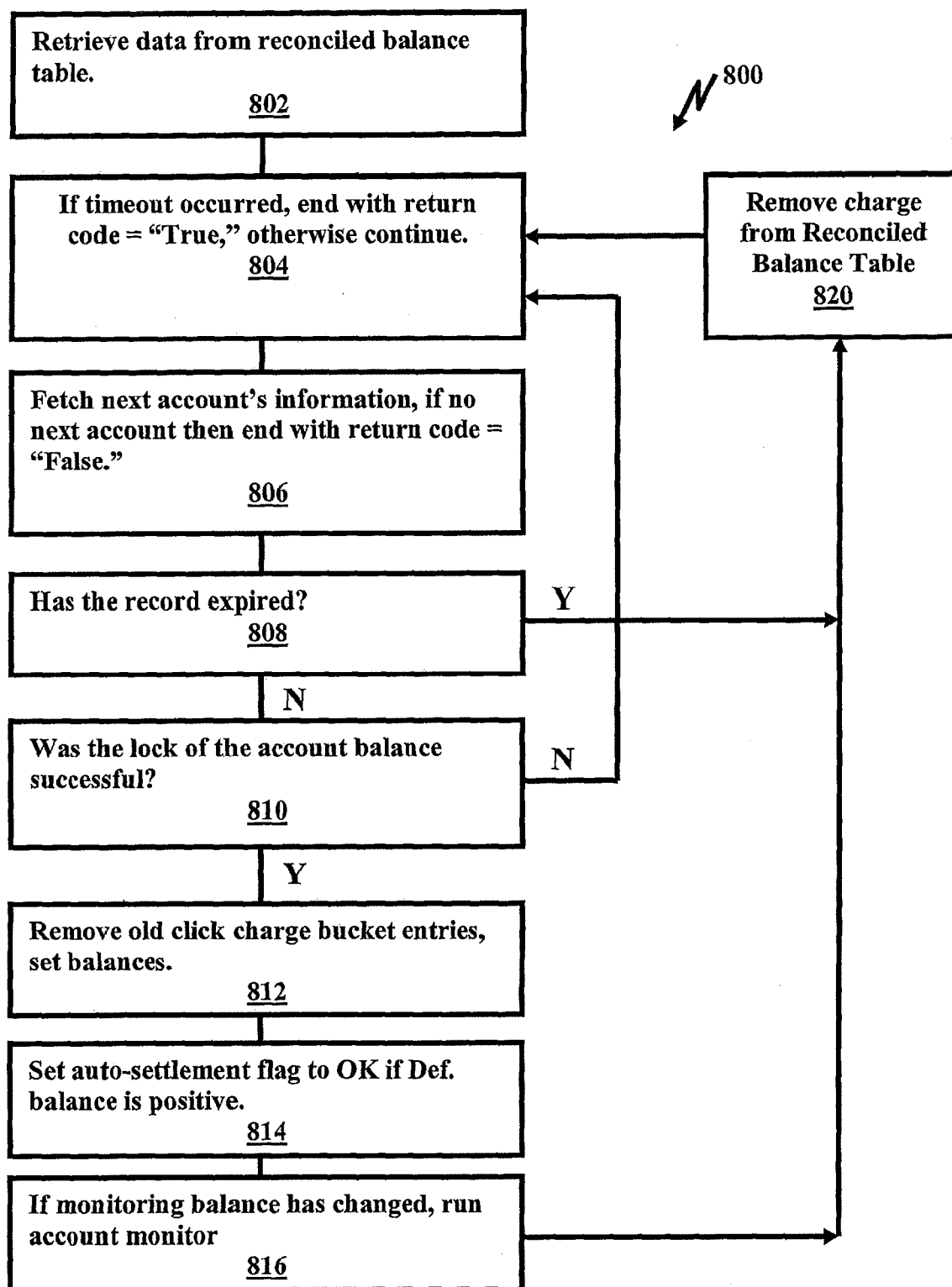


Figure 8

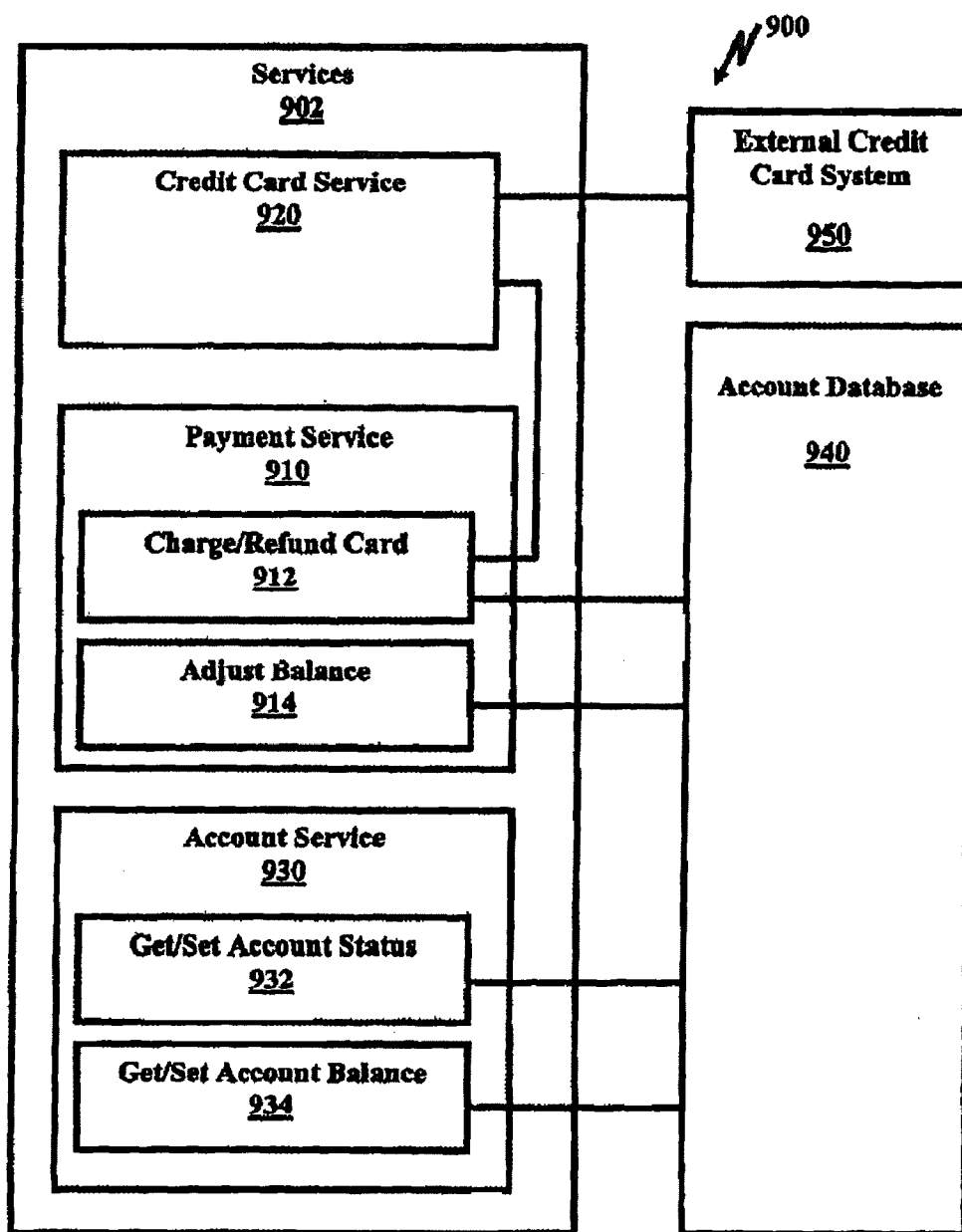


Figure 9

SEARCH ENGINE ACCOUNT MONITORING

CROSS REFERENCE TO RELATED APPLICATION

This application is a continuation in part of application Ser. No. 09/922,090 filed Aug. 3, 2001 in the name of Dominic Cheung, which application is commonly assigned to the assignee of the present application and is incorporated herein in its entirety by this reference.

REFERENCE TO COMPUTER PROGRAM LISTINGS SUBMITTED ON COMPACT DISK

A compact disc appendix is included containing computer program code listings pursuant to 37 C.F.R. 1.52(e) and is hereby incorporated by reference in its entirety. The total number of compact discs is 1 including 23,815 files and 106,393,874 bytes. The files included on the compact disc are listed in a file entitled "dir_s" on the compact disc. Because of the large number of files contained on the compact disc, the required listing of file names, dates of creation and sizes in bytes is included in the file dir_s on the compact disk and incorporated by reference herein. The compact disk contains program code files in ASCII format.

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BACKGROUND

The transfer of information over computer networks has become an increasingly important means by which institutions, corporations, and individuals do business. Computer networks have grown over the years from independent and isolated entities established to serve the needs of a single group into vast internets which interconnect disparate physical networks and allow them to function as a coordinated system. Currently, the largest computer network in existence is the Internet. The Internet is a worldwide interconnection of computer networks that communicate using a common protocol. Millions of computers, from low end personal computers to high end super computers, are connected to the Internet.

The Internet has emerged as a large community of electronically connected users located around the world who readily and regularly exchange significant amounts of information. The Internet continues to serve its original purposes of providing for access to and exchange of information among government agencies, laboratories, and universities for research and education. In addition, the Internet has evolved to serve a variety of interests and forums that extend beyond its original goals. In particular, the Internet is rapidly transforming into a global electronic marketplace of goods and services as well as of ideas and information.

This transformation of the Internet into a global marketplace was driven in large part by the introduction of an information system known as the World Wide Web ("the web"). The web is a unique distributed database designed to give wide access to a large universe of documents. The

database records of the web are in the form of documents known as "pages." These pages reside on web servers and are accessible via the Internet. The web is therefore a vast database of information dispersed across countless individual computer systems that is constantly changing and has no recognizable organization or morphology. Computers connected to the Internet may access the web pages via a program known as a browser, which has a powerful, simple-to-learn graphical user interface. One powerful technique supported by the web browser is known as hyperlinking, which permits web page authors to create links to other web pages which users can then retrieve by using simple point-and-click commands on the web browser.

The pages may be constructed in any one of a variety of formatting conventions, such as Hyper Text Markup Language (HTML), and may include multimedia information content such as graphics, audio, and moving pictures. Any person with a computer and a connection to the Internet may access any publicly accessible page posted on the web. Thus, a presence on the web has the capability to introduce a worldwide base of consumers to businesses, individuals, and institutions seeking to advertise their products and services to potential customers, or to distribute or promote information. Furthermore, the ever increasing sophistication in the design of web pages, made possible by the exponential increase in data transmission rates and computer processing speeds, makes the web an increasingly attractive medium for advertising and other business purposes, as well as for the free flow of information.

The availability of powerful new tools that facilitate the development and distribution of Internet content has led to a proliferation of information, products, and services offered on the Internet and dramatic growth in the number of consumers using the Internet. International Data Corporation, commonly referred to as IDC, estimates that the number of Internet users will grow from approximately 97 million worldwide in 1998 to approximately 320 million worldwide by the end of 2002. In addition, commerce conducted over the Internet has grown and is expected to grow dramatically. IDC estimates that the percentage of Internet users buying goods and services on the Internet will increase from approximately 28% at the end of 1998 to approximately 40% in 2002, and that over the same period of time, the total value of goods and services purchased over the Internet will increase from approximately \$32.4 billion to approximately \$425.7 billion.

The Internet has emerged as an attractive new medium for businesses and advertisers of information, products and services to reach these large numbers of consumers. However, the web is composed of a seemingly limitless number of web pages dispersed across millions of different computer systems all over the world in no discernible organization. Search services or mechanisms, such as directories and search engines, have been developed to index and search the information available on the web and thereby help Internet users locate information of interest. These search services enable consumers to search the Internet for a listing of web sites based on a specific topic, product, or service of interest.

Search services are second only to e-mail as the most frequently used tool on the Internet. As a result, web sites providing search services offer advertisers significant reach into the Internet audience and give advertisers the opportunity to target consumer interests based on keyword or topical search requests. Advertisers, of course, have an interest in participating in search result listings. They generally seek to

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maximize exposure and traffic, while managing any costs associated with such exposure in an efficient and cost-effective manner.

Generally, in a web-based search on an Internet search engine, a user enters a search term comprising one or more keywords, which the search engine then uses to generate a listing of web pages that the user may access via a hyperlink. There are many ways in which a search engine can return the result listings. There are search engines that use automated search technology, which relies in large part on complex, mathematics-based database search algorithms that select and rank web pages based on multiple criteria such as keyword density and keyword location. These search engines frequently catalog search results that rely on invisible web site descriptions, or "meta tags", that are authored by web site promoters. It is not uncommon for web site owners to freely tag their sites as they choose in an attempt to attract additional consumer attention at little to no marginal cost. Other search engines and web site directories may also rely on manual efforts of limited editorial staffs to review web page information. No matter what the process, however, web page owners seek to target their web exposure and distribute information to the attention of interested users on a current and comprehensive basis, while maintaining costs or monitoring pre-determined budgets.

One known effort that has been used by advertisers to generate web site traffic is banner advertising, where web site promoters seeking to promote and increase their web exposure by purchasing space on the pages of popular commercial web sites. The web site promoters usually fill this space with a colorful graphic, known as a banner, advertising their own web site and acting as a hyperlink for a visitor to click to access the site. Banners may be displayed at every page access or may be targeted to search terms on a search engine. Like traditional advertising, banner advertising on the Internet is typically priced on an impression basis with advertisers paying for exposures to potential consumers.

Internet advertising can offer a level of targetability, interactivity, and measurability not generally available in other media. With the proper tools, Internet advertisers have the ability to target their messages to specific groups of consumers, receive prompt feedback as to the effectiveness of their advertising campaigns, and monitor any costs associated in the process. Many of the traditional paradigms of advertising and search engine algorithms fail to maximize the delivery of relevant information via the web to interested parties in a cost-effective manner for the advertiser. Ideally, web site promoters (advertisers) should be able to control their participation or placement in search result listings so that their listings appear in searches that are relevant to the content of their web site and any associated costs are effectively monitored. Search engine functionality needs to facilitate an on-line marketplace which offers consumers quick, easy and relevant search results while providing Internet advertisers and promoters with a more cost-effective way to target consumers and monitor costs. In this on-line marketplace, companies selling products, services, or information will appear in positions on a search result list generated by an Internet search engine for effective costs or spending allowances.

Since advertisers generally want to maximize results and minimize costs, advertisers have an incentive to select search keywords that are most relevant to their web site offerings and manage costs in using or promoting selected keywords. In one search engine model, for example, advertisers pay for each click through referral generated from the

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search result lists generated by the search engine. Such a search engine is described in U.S. Pat. No. 6,269,361, issued Jul. 31, 2001 to Davis, et al., and entitled "System and method for influencing a position on a search result list generated by a computer network search engine". The higher an advertiser's position on a search result list, the higher the likelihood that that advertiser will get a "referral." The likelihood that a consumer will be referred to the advertiser's web site through the search result list is directly related to the advertiser's position in the search result list.

The search engine provider may maintain accounts for each advertiser, also called a web site promoter. Because large numbers of charges may accrue for an account in a short period of time, maintaining an accurate and up-to-date account database is not only important, but can be invaluable. Existing account monitoring methods often result in advertisements being over-delivered and the advertiser's account being overcharged. Since advertisers may have established predetermined limits for certain charges, the search provider may not be reimbursed for the services provided to the advertiser beyond the advertiser's predetermined limit. Further, competing advertisers, which are paying for chargeable events after a competitor's limit has been reached, may be unnecessarily spending money for participation or priority placement in the search result listings if the non-paying advertiser's listing is still considered active.

BRIEF SUMMARY

An account monitoring system addresses the aforementioned problems or inefficiencies by providing a system and method that accurately manages a web site promoter's account with an Internet search engine provider. More particularly, the account monitoring system allows the search engine provider to provide account information notices to the various web site promoters and prevent over-delivery and overcharging for participation in a search engine. In application of the invention to an embodiment, the search engine charges the web site promoter on a chargeable event basis, adjusting for fraudulent charges.

BRIEF DESCRIPTION OF SEVERAL VIEWS OF THE DRAWINGS

FIG. 1 is a block diagram illustrating an account monitor system;

FIG. 2 is a block diagram illustrating an account monitor system;

FIG. 3 is a flow chart illustrating a method of account monitoring;

FIG. 4 is a block diagram illustrating a network environment including an account monitor;

FIG. 5 is a flow chart illustrating a method of executing the various agents in an account monitor system;

FIG. 6 is a flow chart illustrating a method of determining definitive click charges in an account monitor system;

FIG. 7 is a flow chart illustrating a method of accounting for click results in an account monitor system;

FIG. 8 is a flow chart illustrating a method of reconciling balances in an account monitor system; and

FIG. 9 is a block diagram illustrating some account monitoring services.

DETAILED DESCRIPTION OF THE PRESENTLY PREFERRED EMBODIMENTS

I. Introduction

Various novel methods and systems of account monitor for search engines are disclosed that reduce over-delivery of prioritized search results and reduce over-billing of advertisers. Because of the problems and inefficiencies with existing systems described above, a need exists for a search engine that more accurately monitors advertisers' accounts. Such a search engine account monitor may 1. recognize when an advertiser's account balance has reached a pre-defined limit; 2. factor in the effect of payments made by an advertiser to an account; 3. track chargeable event charges with minimal processing delay, in order to maintain current estimates of account balances; 4. disregard charges for non-chargeable events, e.g. in the event of fraudulent chargeable events; 5. incorporate definitive chargeable event charges for defined periods determined by a separate authoritative charge determination system that may use click filtering algorithms that have higher latency than acceptable for maintaining a most-current estimate of account balances, while "backing out" the effect of real-time monitored clicks for the same period; 6. incorporate definitive account balance information from an external financial accounting system; 7. charge and credit advertisers' credit cards or similar method of payment, record such charges, advise the financial accounting system of such charges, and consider such charges in calculating advertisers' account balances; 8. charge an advertiser's credit card or similar method of payment to replenish a depleted account whenever the account approaches a predetermined balance such as zero; 9. charge an advertiser's credit card to bring an account up to a prearranged balance at periodic intervals, for advertisers which elect this service; 10. notify advertisers when their account balance is estimated to be insufficient to support further chargeable event charges beyond a predetermined time period; 11. notify advertisers when their account is replenished by charging their credit card; and/or 12. notify the search engine account managers when various conditions occur.

The following description is presented to enable any person skilled in the art to make and use the invention. For purposes of explanation, specific nomenclature is set forth to provide a thorough understanding of the present invention. Descriptions of specific applications are provided only as examples. Various modifications to the preferred embodiments will be readily apparent to those skilled in the art, and the general principles defined herein may be applied to other embodiments and applications without departing from the spirit and scope of the invention. Thus, the present invention is not intended to be limited to the embodiments shown, but is to be accorded the widest scope consistent with the principles and features disclosed herein.

II. Definitions

Agent—A program that calls methods periodically to perform a specific task. Multiple agents can be run simultaneously to perform the same or different tasks.

CRM—Customer Relationship Management.

CSR—Customer Service Representatives.

Client—A member of a class or group that uses the services of another class or group to which it is not related. In the context of a computer network, such as the Internet, a client is a process (i.e. roughly a program or task) that requests a service which is provided by another process, known as a server program.

EJB—Enterprise Java Beans.

Fraud protection agent—A system that filters out fraudulent or questionable chargeable events. Such charges may be filtered out in a multi-step process using different filtering techniques.

Method—A program or process that may be grouped with other methods into a service. Methods are commonly executed by an agent.

RTC agent—Real-time click agent. A Real-time click agent listens to clicks at a web site and forward the data to a central server for account monitoring.

Search term—The terms in a search performed by a search engine.

Search result list—In a search service, the search result list is a list of the search results ordered and returned to the user by the search engine.

Server—A remote computer system that is accessible over a communications medium such as the Internet. A server may act as an information provider for a computer network.

Service—A collection of methods.

URL—Uniform Resource Locators.

Web site—A page or set of pages accessible via the World Wide Web.

Web site promoters—An entity that wishes to promote a particular web site, also known as an advertiser. A web site promoter is typically an owner, operator, or agent of the web site.

III. Exemplary Embodiment

Internet search engines provide a way for web site advertisers to promote their web sites in search results or gain exposure by appearing in search results containing their web site description. A tool enabling advertisers to participate in search result listings for searches on terms relevant to their business while more accurately monitoring costs associated with the participation provides a powerful advantage to businesses and others seeking to manage costs associated with increase in web exposure. Although the account monitoring system described herein can be applied to many different search engine models, it is helpful for purposes of description to detail the system as used in connection with a pay-for-placement model explained below.

To participate in the process as applied to a pay for placement model search engine, an advertiser, such as a web site promoter, may access the advertiser's user account through a secure web site. The advertiser may use the account to place a priced amount on search terms that are relevant to the advertiser's web site. Each priced amount is specific to a search term-web site combination and corresponds to a money amount that the advertiser will pay to the owner of the search engine each time a searcher clicks on the advertiser's hyperlinked listing in the search result list generated by the search engine. In alternative embodiments, the advertiser may place a priced amount on other chargeable events, such as display of the advertiser's search listing to a searcher, a referral to the advertiser's web site, or some subsequent searcher action at the advertiser's web site such as on-line purchase of a good or service by the searcher. The searcher's click will result in an access request being sent to the advertiser's web site, which will respond by transmitting the advertiser's web page to the searcher's browser. The charge to the advertiser for the placement is therefore directly proportional to the benefit received, since the charge is based on the number of referrals to the advertiser's web site that were generated by the search engine.

The higher the priced amount or bid, the more advantageous the placement in the search result list that is generated

when the bidden search term is entered by a searcher using the search engine. More advantageous positioning is provided, in one embodiment, by placing the advertiser's respective search listing higher in the search results or nearer the top of the list of search results. In other embodiments, the advertiser's listing may be displayed separate from the list of search results or even in a separate web browser window. In one exemplary embodiment, the search result list is arranged in order of decreasing bid amount, with the search listing corresponding to the highest bids displayed first to the searcher. Each search listing corresponding to a bid may be identified on the display as a paid listing. The bid amount may included with the search listing. In addition, the search result list of the exemplary embodiment is preferably combined with "non-paid" web site descriptions generated by a conventional Internet search engine, preferably including listings generated according to mathematics-based database search algorithms as discussed above. The combination of paid and unpaid listings helps ensure that the searcher will receive the most complete and relevant search results. The non-paid listings are considered to have a bid amount of zero and are therefore listed separately or underneath the paid results.

In the exemplary embodiments described herein, the web site promoters may influence a position for a search listing within a search result list generated by an Internet search engine. The web site promoter first selects a search term comprising one or more keywords relevant to the content of the web site to be listed. The web site promoter influences the rank position for the search listing through an ongoing online competitive bidding process with other web site promoters. The bidding process occurs when an advertiser enters a new bid amount for an existing search listing or enters a bid amount for a new search listing. Preferably, the promoter's bid is then processed substantially in real time. This bid amount is compared with all other bid amounts from other promoters for the same search term, and generates new rank values for all search listings having that search term. The rank value determines the position where the promoter's web site description will appear on the search results list page that is generated when the search term is entered into the query box on the search engine by a searcher. A higher bid will result in a higher rank value and a more advantageous placement, which is preferably near the beginning of the search results list page. Preferably, the quantity used in the competitive bidding process is a money amount that the web site promoter will pay to an owner of the Internet search engine each time the advertiser's web site is referred by the search engine. Most preferably, this money amount will be deducted from an account balance that is retained in the promoter's account for each time the promoter's web site is referred by the search engine.

Each account includes contact and billing information for a web site promoter. In addition, each account includes at least one search listing, each search listing having five components: a description of the web site to be listed, the Uniform Resource Locator (URL) of the web site, a search term comprising one or more keywords, a bid amount, and a title for the search listing. Each account may also include the promoter's payment history and a history of search listings entered by the user. The promoter logs in to his or her account via an authentication process running on a secure server. Once logged in, the promoter may add, delete, or modify a search listing. The functions of adding or deleting a search listing, or modifying the bid amount of a search listing is to initiate the competitive bidding process described above. All search listing changes and modifica-

tions are processed substantially in real time to support the online competitive bidding process.

While described in connection with exemplary embodiments that may be referred to as pay for placement systems, the method and apparatus described herein may be applied to any suitable type of database or search engine system.

IV. Seniority

When multiple advertisers seek participation or inclusion in the search result listings for the same search term, the order that those advertisers appear in the search results is generally based on a relative relevance methodology. This ordering can be inaccurate or affected by information maintained by the search engine. For example, in the pay-for-performance model, an advertiser who placed their bid earliest may be given priority (listed higher) than other advertisers who placed their bids later. If an advertiser changes their bid, either by increasing the bid or reducing the bid, that advertiser's seniority may be reset to the time the bid value was changed. If an account is taken off-line, for example for failure to fund a pre-pay account, the account may lose its seniority. In such a case, the account may be given seniority as of when comes back online. Optionally, if the account was turned off erroneously, the account may keep its original seniority for all of the account's search terms. The status update time may be unaffected when an account goes from "ON" to "PROVISIONALLY OFF," or from "PROVISIONALLY OFF" to "ON." The status update time may be updated only when the account goes from "ON" to "OFF," "OFF" to "ON," or "PROVISIONALLY OFF" to "OFF."

In one embodiment, seniority may be determined using the following process. First, a "bid time" for each bid for an account is set to the time when the bid was originally placed. If the bid is changed, the bid time reset to the time when the bid was changed. Second, an account's "status update time" is set to the time when an account goes online or offline. The seniority, also called the "effective bid time" is the most recent of the bid time and status update time. By maintaining both the bid time and the status update time, all the bids for an account may be taken off-line by adjusting the status update time and an account that was erroneous turned-off can be restored to its proper seniority by resetting the account's status update time.

V. Account Monitoring System

FIGS. 1 to 9 represent various aspects of an account monitoring system for use with an Internet search engine. Referring to FIG. 1, a block diagram 100 illustrates an account monitoring system 120 for use with an Internet-based search engine. The account monitoring system 120 may comprise a set of software applications or subroutines for example, agents and services. The agents may include a bulk adjustment agent 122, an account aging agent 124, a search listing agent 126, an auto charge agent 128, a fixed budget agent 130, a reconciled balance agent 132, a real-time event agent 134, and a fraud protection agent 136. The services 140 may include the services described with reference to FIG. 9, which include a payment service 910, a credit card service 920, and an account service 930.

The account monitoring system 120 may interface with various other applications and systems, for example, a search engine 102, a search results database 104, a credit card system 106, an accounting system 108, a CRM system 110, and a fraud protection system 112.

The bulk adjustment agent 122 allows automatic adjustments to account balances based on internal account management or external data. The bulk adjustment agent 122

may make adjustments based on some business rules that affect multiple accounts. For example, the bulk adjustment agent 122 can determine which accounts did not meet a minimum charge level for a period and adjust the charges for that account for that period to the minimum level. In one embodiment, the bulk adjustment agent 122 calls a "process adjustments" method that retrieves information from the accounting system 108 and other systems via a drop box and sends the information to the account database 105. The other systems may include an ad hoc entry system and the CRM system 110.

The account aging agent 124 determines which accounts have a status that changed, for example from "NEW" to "OLD." An account may be old 30 days after it goes on-line. Alternatively, various business rules may be used to determine the age of an account. In one embodiment, the account aging agent 124 calls a "monitor account" method after an account is changed.

The search listing agent 126 propagates the account status of the various accounts to the search result database. The status of the accounts may be propagated to all the serving sites when multiple serving sites exist. In an embodiment, the search listing agent 126 calls a "propagate account status" method to retrieve the account status from the account database 105 and send the account status to the search result database 104. In an embodiment, the search listing agent 126 calls a "propagate account status" method that retrieves status information from the account database 105 and sends it to the search result database 104. The account status may indicate various characteristics about the account including whether the account is on-line or off-line and for which search terms the status applies, also the status may indicate the priced amounts.

The auto charge agent 128 automatically charges a credit card or similar method of payment account associated with an account in a non-stop payment plan. The various credit card accounts may be charged automatically when the associated account's balance falls below a pre-determined threshold, which can be based on run rate or fixed dollar amount, on a periodic basis, or via other methods. The auto charge agent 130 may use a charge card method to perform the credit card charge.

The fixed budget agent 130 charges credit card accounts associated with accounts that elected the fixed-budget payment plan. The fixed budget agent 130 may charge the credit card account associated with an account that has a fixed payment plan on the expiration date of the existing plan. The fixed budget agent 130 may use a charge card method to perform the credit card charge.

An advertiser that has not authorized automatic payments or payments via credit cards may add funds to their account by using conventional paper-based checks and other forms of payment. Additional funds may be added to such an advertiser's account in the Accounting System 108 through manual entry via a user interface. The account monitoring system 120 may be updated with such manually entered funds when the accounting system 108 exports an authoritative balance information and the reconciled balance agent 134 successfully importing the authoritative balance into the account database 105.

The reconciled balance agent 132 processes data from the accounting system 108. The accounting system 108 may be any accounting system, such as Oracle Financial®. The accounting system 108 may use various business rule to adjust the balance of the account and turn an account on or off. In an embodiment, the reconciled balance agent 132 calls a "reconcile balances" method and retrieves informa-

tion from the accounting system 108 via a drop box. The "reconcile balances" method sends the information to the account database 105. If one or more account statuses have changed, the "reconcile balances" method calls the "monitor account" method.

The real-time event agent 134 processes chargeable events in substantially real-time. The real-time event agent 134 then adjusts the working balance of the accounts associated with the events. In one embodiment, events correspond to clicks by a searcher on a displayed search listing of an advertiser. Other examples of an event that triggers a payment obligation include payment of consideration, inclusion of the advertiser's search listing in the search results provided to the searcher, referred to as an impression, or some action subsequently taken by the searcher. Examples of such an action include registering at the advertiser's web site after the searcher's browser has been redirected there; purchasing a good or service from the advertiser or a number of page views at the advertiser's web site that exceeds a specified threshold. Any type of action by the searcher that can be monitored and accounted for may be used as the basis for a chargeable event. For example, if an advertiser agreed to pay \$0.95 per event for a search result from the keyword "pen," and the real-time event agent 134 detected 2 non-fraudulent events associated with the advertiser's web page, then the real-time event agent 134 would reduce the advertiser's working balance by \$1.90.

The fraud protection agent 136 processes data from the fraud detection system, that is the fraud protection system 112. The fraud protection agent 136 adjusts the balance of the accounts and turns the accounts' status off according to various business rules. In an embodiment, the fraud protection agent 136 calls a "process definitive events" method that retrieves information from the fraud protection system 112 via a drop box. The "process definitive events" method sends the information to the account database 105. If one or more account statuses have changed, the "process definitive events" method calls the "monitor account" method. The account monitoring system 120 may include multiple fraud detection mechanism including the fraud protection agent 136.

Referring to FIG. 2, a block diagram 200 illustrates an account monitoring system 210. The account monitoring system 210 may comprise a set of software applications, methods, or subroutines for example, the account monitoring system 210 may include: a "get/set account status" method 220, a "get/set account balance" method 222, an "enable/disable account" method 224, an "automatic charge" method 226, an account monitoring configuration method 250, a first fraud detection method 228 (e.g. CTP 1.0), an "update account balance" method 230, an advertiser notification method 232, a credit payment authorization method 234, and an account monitor scheduler method 252. The "get/set account status" method 220 may be implemented as two separate methods, a get account status method and a set account status method, or combined together in to a single method. Like other methods shown in FIG. 2 may also be implemented with multiple methods. For example, the "get/set account balance" method 222 may include a get account balance and a set account balance, the "enable/disable account" method 224 may include an enable account and a disable account.

The account monitoring system 210 may interface with various other systems including an accounting system 240, a second fraud detection system 242 (e.g. CTP 2.0), a CRM system 244, and a credit card system 246. Customer service

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representatives ("CSR") 212 may access the account monitoring system 210 via the CRM system 244.

Referring to the account monitoring systems of FIGS. 1 and 2, the advertiser's accounts may be in one of three states. The three states are: 1. off-line, 2. on-line, and 3. off-line provisional. When an account is in the online state, the search listings associated with that account are served by the search engine. When an account is in the off-line state, the search listings associated with that account are not served by the search engine. When an account is in the off-line provisional state, the search listings associated with that account are not served by the search engine and they will not lose seniority when account comes back on-line.

The status of an account may be determined as a function of several factors. For example, the account status may be determined by the following parameters: life status, client request status, editorial status, internal status, cancellation status, finance status, auto settlement status, security status, and payment status. The life status may be "NEW" if the account that is less than 30 days old, "DEAD" if the account is deemed to be dead, for example the company went out of business, or "WORKING" if the account is more than 30 days old and not "DEAD."

The client request status indicates whether the advertiser (client) wishes their account to be active or not. For example, the client request status may be "ON," which is the normally status, when the advertiser wishes the account to be active and "OFF" when the advertiser explicitly requests the account to go off-line. The internal status may be "ON" under normal conditions or "OFF" when the account is turned off for reasons internal to the search engine provider.

The editorial status is used by the editor to turn off an account. When the editorial status is "ON," the editor has approved the account to go on-line. The editorial status is "OFF" when the editor has not yet approved the account. Accounts are created with editorial status set to "OFF." An editor may turn an account off because the search terms do not match the content of the web site or for other reasons.

The security status indicates the status of the credit card associated with an advertiser. The security status may be, for example, "ON-LINE-VERIFIED," "OFF-LINE-FRAUDULENT," "OFF-LINE-HIGH-RISK-PROVISIONAL," "ON-LINE-HIGH-RISK," or "ON-LINE-UNVERIFIED." The security status of "ON-LINE-VERIFIED" may be used when the credit card of the account is verified. The security status of "OFF-LINE-FRAUDULENT" may be used when the credit card of account is determined to be fraudulent. The security status of "OFF-LINE-HIGH-RISK-PROVISIONAL" may be used when the account is turned off due to high risk, or "ON-LINE-HIGH-RISK" may be used when the account is a high risk, but keep account on. The security status of "ON-LINE-UNVERIFIED" may be used when the account is kept on-line even though the credit card has not been verified. This may be the default security status for accounts created by salespersons. The security status of "OFFLINE-UNVERIFIED" may be used when the account is off-line because the credit card has not been verified. This may be the default security status for accounts that signed up through self-service, for example via the Internet.

The cancellation status indicates whether or not a client has cancelled the service. The cancellation status may be "ON" which is the normal setting or "OFF" when the account is cancelled by the client.

The finance status indicates whether the account is on line or off line based on a determination by the finance department of the search engine provider. The finance status may

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be "ON" which is the normal setting or "OFF" when the search engine provider's finance department wants account turned off.

The auto settlement status indicates whether the account is auto settled or not. The auto settlement status may be "ON" which is the normal setting or "OFF" when the account has been auto settled.

The payment status indicates the advertiser's payment status. The payment status may be "ON" when the account has money, "NEAR_EXCEED" when the account running out of money, "EXCEED" when the account is out of money, or "OFF" when the account is out of money and the account is turned off.

In an embodiment, the account status is "ON" if and only if the life status is "NEW" or "WORKING," the client status is "ON" and the editorial status is "ON," the internal status is "ON," the security status is "ON-LINE-VERIFIED," "ON-LINE-HIGH-RISK," or "ON-LINE-UNVERIFIED," the cancellation status is "ON," the finance status is "ON," the settlement status is "ON," the payment status is (not "OFF") or if the payment status is "OFF" and account is in the nonstop payment plan and credit card charge status is not "DECLINED," that is, non stop account has agreed to pay but we haven't have a chance to charge the account yet.

The account status may be "OFF-LINE-PROVISIONAL" if and only if the life status is "NEW" or "WORKING," the client status is "ON," the editorial status is "ON," the internal status is "ON," the security status is "OFF-LINE-HIGH-RISK-PROVISIONAL," the cancellation status is "ON," the finance status is "ON," the settlement status is "ON," the payment status is (not "OFF") or (payment status is "OFF" and account is in the nonstop payment plan and credit card charge status is not "DECLINED" (i.e. non stop account has agreed to pay but we haven't have a chance to charge the account yet).

The account status may be "OFF" if and only if the life status is "DEAD," client status is "OFF," editorial status is "OFF," internal status is "OFF," security status is "OFF-LINE-FRAUDULENT," or "OFF-LINE-UNVERIFIED" cancellation status is "OFF," finance status is "OFF," settlement status is "OFF," or payment status is "OFF," and not (account is in the nonstop payment plan and credit card charge status is not "DECLINED" (i.e. non stop account has agreed to pay but we haven't have a chance to charge the account yet).

For accounts in the prepay deposit payment plan and prepay fixed budget payment plan, if the accounts definitive balance drops below zero due to definitive event charges, a positive adjustment/settlement is made to the account to bring the balance back to zero. When this occurs, the settlement status is set to "OFF." Without the settlement status, the account will remain on after a settlement, in cases where shutoff threshold amount less than zero. The settlement status goes back to "ON" only if the account's balance becomes positive again, e.g. due to a funding event.

VI. Balances

In an embodiment, several balances are determined for each account. They may include a working balance, a definitive balance, a reconciled balance, an estimated definitive balance, and a monitoring balance. If one or more of the balances exceeds a threshold, the search listing(s) associated with that account may not be included or placed in search lists generated by the search engine. For example, such a search listing may be ordered as if the respective priced amount for a given search term was zero. Alternative, the search listing may be ordered as if the respective priced

amount for a given search term was above zero and below all the other non-zero priced amounts. Other consequences may also result from one or more of the balances exceeding (being above or below) a threshold.

A reconciled balance is a balance that may be generated by a financial system, for example the accounting system 108 of FIG. 1. The reconciled balance is meaningful when accompanied by the various timestamps associated with the underlying values used to determine the reconciled balance. The timestamps may include: an event charge timestamp, an adjustment timestamp, a credit card charge timestamp, and a publication timestamp. The publication timestamp is set to the time when the reconciled balance is generated. For example, the reconciled balance generated at 5 PM on Jul. 21, 2001, the publication timestamp for account "A" may be \$30.25. This reconciled balance may include the charges, including event charges, up to the event charge timestamp time, for example 3 PM on Jul. 21, 2001, the credit card charges up to the credit card charge timestamp, for example, 4 PM on Jul. 21, 2001, and the adjustments up to the adjustment timestamp time, for example 4 PM on Jul. 21, 2001. A credit card charges is a deposits made by charging a credit card. When a reconciled balance is generated (published), the account monitor 210 recalculates the other balances. The other balances may be calculated as follows:

The definitive balance may be determined by starting with the reconciled balance and subtracting the definitive event charges since the event charge timestamp and adding the credit card charges and adjustments. See Eqn. 1.

$$\begin{aligned} \text{Definitive balance} = & \text{reconciled balance} - \text{definitive} \\ & \text{event charges since the event charge times-} \\ & \text{tamp} + \text{credit card charges since the credit card} \\ & \text{charge timestamp} + \text{adjustments since the adjust-} \\ & \text{ment timestamp} \end{aligned} \quad \text{Eqn. 1}$$

The working balance may be determined by starting with the definitive balance calculated via Eqn. 1 and subtracting the non-definitive event charges. See Eqn. 2.

$$\begin{aligned} \text{Working balance} = & \text{Definitive balance} - \text{non-definitive} \\ & \text{event charges since the event charge timestamp} \end{aligned} \quad \text{Eqn. 2}$$

The estimated definitive balance may be determined by starting with the reconciled balance and subtracting the definitive event charges since the event charge timestamp and the estimated definitive event charges and adding the credit card charges and adjustments. See Eqn. 3. The estimated definitive balance is essentially the definitive balance less an estimated amount of non-definitive event charges.

$$\begin{aligned} \text{Estimated Definitive Balance} = & \text{reconciled balance} - \\ & \text{definitive event charge since the event charge} \\ & \text{timestamp} - \text{estimated definitive event charges} \\ & \text{since the event charge timestamp} + \text{credit card} \\ & \text{charges since the credit card charge timestamp} + \\ & \text{adjustments since the adjustment timestamp.} \end{aligned} \quad \text{Eqn. 3}$$

The monitoring balance may be determined by taking the smallest value of the estimated definitive balance added to the account's credit limit and the remaining capital. See Eqn. 4

$$\begin{aligned} \text{Monitoring balance} = & \text{smaller of 1. the estimated} \\ & \text{definitive balance} + \text{credit limit; and 2. the} \\ & \text{remaining capital.} \end{aligned} \quad \text{Eqn. 4}$$

The charges for the events may be analyzed by determining various event charges including a definitive event charges amount, a non-definitive event charges amount, and an estimated definitive event charges amount. Definitive event charges for an account may be the event charges for that account after the fraud protection system has filtered out the fraudulent event charges. The fraud protection system

may filter out fraudulent event charges in a multiple stage process. The fraud protection system may use a large first-in-first-out queue of prior events, for example the queue may include up to 100,000 entries in a hash table format. Such a queue may be accessible to multiple event detection applications. The event detection applications may be executed at different geographic locations, for example California, the Mid-West, and the East Coast. Non-definitive event charges may be event charges from an RTC agent. The non-definitive event charges may have had some of the fraudulent event charges filtered out. The estimated definitive event charges may be the smallest amount of the following plus an offset: 1. the non-definitive event charges, for example \$98 for 8-9 PM, 2. definitive event charge for example from 7-8 PM is \$90, 3. estimated event charge based on account specific hourly run-rate, e.g. definitive event charge for example from 6-7 PM is \$100, 4. estimated event charge for example from 8-9 PM=\$80, and 5. optionally other criteria including non-linear criteria. For example, the estimated event charges based on the following traffic pattern: the definitive event charges from 7-8 PM is \$90; the traffic from 8-9 PM is historically is 90% of traffic from 7-8 PM; the estimated event charge for 8-9 PM is \$81 (\$90 times 90%). The estimated event charges is the smallest of \$98, \$80, and \$81, which is \$80. This estimated event charges is then reduced by a fix dollar amount offset, e.g. \$5. The resulting estimated event charges of \$75.

The credit limit may apply to invoice capped accounts only. The credit limit for an account may be greater than or equal to zero dollars. The remaining cap is the remaining funds allocated for the current time period. Remaining cap may be greater than or equal to zero dollars or null. A null cap may mean an infinite credit limit.

VII. Business Rules for the Payment Status

Various business rules for the payment status determine the values of the following parameters: 1. the number of near exceed days allowed, 2. the near exceed amount, 3. the number of exceed days allowed, 4. the exceed amount, 5. the number of shutoff threshold days, 6. the shutoff threshold amount, 7. the number of autocharge days, and 8. the autocharge amount. These parameters may be expressed in days, converted into amount by days times run rate, a fix amount, or other value. The run rate of an account may be the average daily event charge for the most recent 3 days with activity.

The payment status may be determined from the near exceed, exceed and shutoff parameters. The value of the parameters may be uniquely determined by one or more of the following factors including: 1. account age; 2. payment plan, 3. client type, and 4. marketplace. The account age may be, for example "NEW" or "OLD." If the account is less than 30 days old then it is "NEW", otherwise the account is "OLD."

The payment plan may be invoice with a maximum amount (cap), invoice with no maximum amount, prepay deposit, prepay nonstop, prepay with a fixed spending budget. An invoice with a cap payment plan is an invoice account with a spending cap per time period. An invoice with no cap payment plan is an invoice account with no spending cap or limit. A prepay deposit payment plan is a prepay account with a fixed deposit amount and will not pay for any event s exceeding the deposit amount. A prepay nonstop payment plan is a prepay account that is replenished by the account monitor by charging the account's default credit card when it's monitoring balance falls below the auto charge days times the run rate or auto charge amount. A

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prepay fixed budget payment plan is a prepay account that is replenished at a certain time of a month to a predetermined amount. For example, if the account monitoring balance=\$25 with a replenishment amount of \$100, a charge card charge of \$75 is added to the account bring the balance to the replenishment amount of \$100.

The client type for an account may be "salesman generated" or "on-line generated" depending on how the account was originally open. The marketplace of the account may be the country of the account, advertiser, web site, for example, US, UK, Japan, etc. Alternatively, the market may be another market division such as the technology field of the advertiser, for example retail electronics, retail clothes, wholesale plumbing supplies.

Web site promoters may be periodically notified of their account status. A web site promoters may be automatically notified via e-mail about certain payment status transitions, overall account status change, and credit card charges. The e-mail template may vary depending on the marketplace, payment plan, client type, and account age

VIII. Event Charge Buckets

The event charge bucket table is used to keep track of recent event charges aggregated by account and time period. The tables may have the following fields: account_id, time period, event charge amount, and a flag that indicates whether the amount has been fraud filtered by CTP2.0 developed by GoTo.Com. The buckets in the event charge bucket table are updated by various agents including the RBT agent, the CTP agent, and the RTC agent. The RTC agent may perform the following: for each event, event charges are added to the bucket corresponding to the account and time period, as long as no definitive event charges have been received for that period. The fraud protection agent may perform the following: for each account, the flag is changed to "fraud protection processed", and the non-definitive event charge amount is replaced with the definitive event charge amount. The RTB agent may perform the following: for each account, all the definitive and non-definitive event charges for events already included in the reconciled balance (based on event charge timestamp in the reconciled balance feed) are deleted.

IX. Method of Monitoring an Account

Referring to FIG. 3, a flow chart illustrates a method 300 of monitoring an account.

In block 302, various monitoring parameters are retrieved.

In block 304, various monitoring balances and run rates are retrieved.

In block 306, the account balance is compared to shutoff threshold. If the account balance exceeds the shutoff threshold then in block 320 the payment status is set to a value of "OFF." If the account balance equals or is less than the shutoff threshold then block 308 is executed.

In block 308, the account balance is compared to the "exceed" threshold. If the account balance exceeds the "exceed" threshold then in block 322 the payment status is set to a value of "EXCEED." If the account balance equals or is less than the "exceed" threshold then block 310 is executed.

In block 310, the account balance is compared to the "near exceed" threshold. If the account balance exceeds the "near exceed" threshold then in block 324 the payment status is set to a value of "NEAR EXCEED." If the account balance equals or is less than the "near exceed" threshold then in block 326 the payment status is set to "OK."

After the payment status has been set to "OFF", "EXCEED", "NEAR EXCEED"; or "OK", in block 330, the

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payment status is evaluated to determine if a change in the status has occurred. If the payment status has not changed, the process is complete as represented by block 388. If the payment status has changed, then block 332 is executed. In block 332, a "payment status change" notification is sent to the web site promoter associated with that account. Then in block 334, the account status is evaluated to determine if the account status has changed. If the account status has not changed, the process is complete as represented by block 388. If the account status has changed, in block 338 an "account status changed" notification is sent to the web site promoter associated with that account.

X. Application of the System

Referring to FIG. 4, a network environment 400 including an account monitor server 402. An end-user at an end-user computer 420 having a browser 422 may search the network 410 for web sites and web pages 414 using a search engine 404. The end-user enters search terms on a web page associated with the search engine server 404. The search engine server 404 then access a search results database 406 and provides the search results to the end-user's browser 422. The search results may include links to various web pages 414. The search engine server 404 interfaces with the account monitoring server 402 to track the fees associated with the end-user's search or the resulting click-through(s) to the websites. The web site promoter's account on the account monitoring server 402 is then adjusted accordingly.

An end-user may access the search engine over a computer network 410, such as the Internet, for example by using a web browser, such as Netscape's NAVIGATOR®, Microsoft's INTERNET EXPLORER®, or MOSAIC® to locate web pages stored on web advertiser's server. A browser allow the users to enter addresses of a web page. These addresses are referred to as Uniform Resource Locators, or URLs. In addition, once a page has been retrieved, the browser program can provide access to other pages or records when the user "clicks" on hyperlinks to other web pages. Such hyperlinks are located within the web pages 414 and provide an automated way for the user to enter the URL of another page and to retrieve that page. The pages can be data records including as content plain textual information, or more complex digitally encoded multimedia content, such as software programs, graphics, audio signals, videos, and so forth.

The applications on the account monitoring server 402 and the search engine server 404 may follow a client/server architecture. The client process uses the requested service without having to know any working details about the other server program or the server itself. In networked systems, a client process usually runs on a computer that accesses shared network resources provided by another computer running a corresponding server process. However, it should also be noted that it is possible for the client process and the server process to run on the same computer. The client and server processes may even comprise different programs executing simultaneously on a single computer.

The network 410 will be hereinafter generally referred to as the Internet. Although the system and method of the present invention is specifically useful for the Internet, it should be understood that the computers may be connected together through one of a number of different types of networks. Such networks may include local area networks (LANs), other wide area networks (WANs), regional networks accessed over telephone lines, such as commercial information services, cellular networks, and other forms of networks. Preferably, the search engine server 404, account

monitoring server 402, and web site servers 412 are interconnected via the World Wide Web.

Web site servers 412 may use the functionality provided by a HyperText Transfer Protocol (HTTP) or other communications protocols, such as FTP, SNMP, TELNET, and a number of other protocols.

The account monitoring server 402, also called an account management server, may comprise a computer storage medium, such as a hard disk or RAM, and a processing system. A database may be stored on the storage medium of the account management server. The database contains advertiser account information. It will be appreciated from the description below that the system and method of the present invention may be implemented in software that is stored as executable instructions on a computer storage medium, such as memories or mass storage devices, on the account management server. Conventional browser programs, running on client computers, may be used to access advertiser account information stored on account management server. Preferably, access to the account management server is accomplished through a firewall, not shown, which protects the account management and search result placement programs and the account information from external tampering. Additional security may be provided via enhancements to the standard communications protocols such as Secure HTTP or the Secure Sockets Layer.

The search engine server 404 hosts a search engine program that permits network users, upon navigating to the search engine web server URL or sites on other web servers capable of submitting queries to the search engine web server through their browser program, to type keyword queries to identify pages of interest among the millions of pages available on the World Wide Web. In a preferred embodiment of the present invention, the search engine web server generates a search result list that includes, at least in part, relevant entries obtained from and formatted by the results of the bidding process conducted by the account management server. The search engine server 404 generates a list of hypertext links to documents that contain information relevant to search terms entered by the user at the client computer. The search engine server 404 transmits this list, in the form of a web page, to the network user, where it is displayed on the browser 422 running on the client computer. A presently preferred embodiment of the search engine server 404 may be at GoTo.com.

Search engine server's 404 search results database 406 comprises search listing records used to generate search results in response to user queries. In addition, search engine server 404 may also be connected to the account monitoring server 402. The account monitoring server 402 may also be connected to the network 410. The search engine server 404 and the account monitoring server 402 of the present invention address the different information needs of the end-users located at end-user computers 420.

For example, one class of users located at end-user computers 420 may be network information providers such as advertising web site promoters or owners having web pages 414 located on web site servers 412. These advertising web site promoters, or advertisers, may wish to access account information residing in storage on account monitoring server 402. An advertising web site promoter may, through the account residing on the account monitoring server 402, participate in a competitive bidding process with other advertisers. An advertiser may bid on any number of search terms relevant to the content of the advertiser's web site. In one embodiment of the present invention, the relevance of a bidded search term to an advertiser's web site is

determined through a manual editorial process prior to insertion of the search listing containing the search term and advertiser web site URL into the search result database 406. In an alternate embodiment of the present invention, the relevance of a bidded search term in a search listing to the corresponding web site may be evaluated using a computer program executing on the account monitoring server 402, where the computer program will evaluate the search term and corresponding web site according to a set of predefined editorial rules.

The higher bids receive more advantageous placement on the search result list page generated by the search engine 405 when a search using the search term bid on by the advertiser is executed. In a preferred embodiment of the present invention, the amount bid by an advertiser comprises a money amount that is deducted from the account of the advertiser for each time the advertiser's web site is accessed via a hyperlink on the search result list page. A searcher "clicks" on the hyperlink with a computer input device to initiate a retrieval request to retrieve the information associated with the advertiser's hyperlink. Preferably, each access or "click" on a search result list hyperlink will be redirected to the search engine server 404 to associate the "click" with the account identifier for an advertiser. This redirect action, which is not apparent to the searcher, will access account identification information coded into the search result page before accessing the advertiser's URL using the search result list hyperlink clicked on by the searcher. The account identification information is recorded in the advertiser's account along with information from the retrieval request as a retrieval request event. Since the information obtained through this mechanism conclusively matches an account identifier with a URL in a manner not possible using conventional server system logs known in the art, accurate account debit records will be maintained. Most preferably, the advertiser's web site description and hyperlink on the search result list page is accompanied by an indication that the advertiser's listing is a paid listing. Most preferably, each paid listing displays a "cost to advertiser," which is an amount corresponding to a "price-per-click" paid by the advertiser for each referral to the advertiser's site through the search result list.

A second class of end-users at end-user computers 420 may comprise searchers seeking specific information on the web. The searchers may access, through their browsers 422, a search engine 405 residing on search engine server 404. The search engine 405 search page may include a query box in which a searcher may type a search term comprising one or more keywords. Alternatively, the end-user may query the search engine server 404 through a query box hyperlinked to the search engine server 404 and located on a web page stored at a remote web server. When the searcher has finished entering the search term, the searcher may transmit the query to the search engine server 404 by clicking on a provided hyperlink. The search engine server 404 will then generate a search result list page and transmit this page to the searcher at the end-user computer 420.

The searcher may click on the hypertext links associated with each listing on the search results page to access the corresponding web pages 414. The hypertext links may access web pages anywhere on the Internet, and include paid listings to advertiser web pages 414 located on the advertiser's web site servers 412. In an embodiment, the search result list also includes non-paid listings that are not placed as a result of advertiser bids and are generated by a conventional World Wide Web search engine, such as the INKTOMI®, LYCOS®, or YAHOO!® search engines. The

non-paid hypertext links may also include links manually indexed into the search result database 406 by an editorial team. Most preferably, the non-paid listings follow the paid advertiser listings on the search results page.

The bid amount preferably is a money amount bid by an advertiser for a listing. This money amount is deducted from the advertiser's prepaid account or is recorded for advertiser accounts that are invoiced for each time a search is executed by a user on the corresponding search term and the search result list hyperlink is used to refer the searcher to the advertiser's web site. Finally, a rank value is a value generated dynamically, preferably by the account monitoring server 402, each time an advertiser places a bid or a search enters a search query. The rank value of an advertiser's search listing determines the placement location of the advertiser's entry in the search result list generated when a search is executed on the corresponding search term. Preferably, rank value is an ordinal value determined in a direct relationship to the bid amount 358; the higher the bid amount, the higher the rank value, and the more advantageous the placement location on the search result list. Most preferably, the rank value of 1 is assigned to the highest bid amount with successively higher ordinal values (e.g., 2, 3, 4, . . .) associated with successively lower ranks and assigned to successively lower bid amounts.

"Account Administration" allows an advertiser, among other things, to view and change the advertiser's contact information and billing information, or update the advertiser's access profile, if any. Web-based forms well known in the art and similar to those discussed above are provided for updating account information.

The "Account Administration" menu also includes a selection enabling an advertiser to view the transaction history of the advertiser's account. Under the "View Transaction History" selection, the advertiser may invoke routines to view a listing of past account transactions (e.g., adding money to account, adding or deleting bidded search terms, or changing a bid amount). Additional routines may be implemented to permit advertisers to display a history of transactions of a specified type, or that occur within a specified time. The transaction information may be obtained from the audit trail list. Clickable buttons that may be implemented in software, web-based forms, and/or menus may be provided as known in the art to enable advertisers to specify such limitations.

In addition, "Account Administration" enables an advertiser to set notification options. Under this selection, the advertiser may select options that will cause the system to notify the advertiser when certain key events have occurred. For example, the advertiser may elect to set an option to have the system send conventional electronic mail messages to the advertiser when the advertiser's account balance has fallen below a specified level. In this manner, the advertiser may receive a "warning" to replenish the account before the account is suspended (meaning the advertiser's listings will no longer appear in search result lists). Another key event for which the advertiser may wish notification is a change in position of an advertiser's listing in the search result list generated for a particular search term. For example, an advertiser may wish to have the system send a conventional electronic mail message to the advertiser if the advertiser has been outbid by another advertiser for a particular search term (meaning that the advertiser's listing will appear in a position farther down on the search result list page than previously). When one of the system-specified key events occurs, a database search is triggered for each affected search listing. The system will then execute the appropriate

notification routine in accordance with the notification options specified in the advertiser's account.

An advertiser may add money to the advertiser's account, so that the advertiser will have funds in their account to pay for referrals to the advertiser's site through the search results page. Preferably, only advertisers with funds in their advertiser's accounts may have their paid listings included in any search result lists generated. Most preferably, advertisers meeting selected business criteria may elect, in place of maintaining a positive account balance at all times, incur account charges regardless of account balance and pay an invoiced amount at regular intervals which reflects the charges incurred by actual referrals to the advertiser's site generated by the search engine.

When an advertiser wishes to "Add Money to Account" the account monitoring server receives data identifying the advertiser and retrieves the advertiser's account from the account database. The executing process then stores the advertiser's default billing information and displays the default billing information for the advertiser. The displayed billing information includes a default amount of money to be added, a default payment type, and default instrument information.

An advertiser may add funds online and substantially in real time through the use of a credit card, although the use of other payment types are certainly well within the scope of the present invention. For example, in an alternate embodiment of the present invention, advertisers may add funds to their account by transferring the desired amount from the advertiser's bank account through an electronic funds verification mechanism known in the art such as debit cards. In another alternate embodiment of the present invention, advertisers can add funds to their account using conventional paper-based checks. In that case, the additional funds may be updated in the account record database through manual entry. The instrument information includes further details regarding the type of payment. For example, for a credit card, the instrument information may include data on the name of the credit card (e.g., MasterCard, Visa, or American Express), the credit card number, the expiration date of the credit card, and billing information for the credit card (e.g., billing name and address). In a preferred embodiment of the present invention, only a partial credit card number is displayed to the advertiser for security purposes.

The default values displayed to the advertiser are obtained from a persistent state, e.g., stored in the account database. In an embodiment of the present invention, the stored billing information values may comprise the values set by the advertiser the last (e.g. most recent) time the process of adding money was invoked and completed for the advertiser's account. The default billing information is displayed to the advertiser in a web-based form. The advertiser may click on the appropriate text entry boxes on the web-based form and make changes to the default billing information. After the advertiser completes the changes, the advertiser may click on a hyperlinked "Submit" button provided on the form to request that the system update the billing information and current balance. Once the advertiser has requested an update, a function is invoked by the system which validates the billing information provided by the advertiser and displays it back to the advertiser for confirmation. The confirmation billing information is displayed in read-only form and may not be changed by the advertiser.

The validation step functions as follows. If payment is to be debited from an advertiser's external account, payment may be authenticated, authorized and completed. However, if the payment type is by credit card, a validating algorithm

is invoked by the system, which validates the credit card number. The validating algorithm also validates the expiration date via a straightforward comparison with the current system date and time. In addition, the function stores the new values in a temporary instance prior to confirmation by the advertiser.

Once the advertiser ascertains that the displayed data is correct, the advertiser may click on a "Confirm" button provided on the page to indicate that the account should be updated. A function is invoked by the system which adds money to the appropriate account balance, updates the advertiser's billing information, and appends the billing information to the advertiser's payment history. The advertiser's updated billing information is stored to the persistent state (e.g., the account record database) from the temporary instance.

Within the function invoked, a credit card payment function may be invoked by the system. In an alternate embodiment of the present invention, other payment functions such as debit card payments may be invoked by defining multiple payment types depending on the updated value of the payment type.

If the payment type is credit card, the user's account is credited immediately, the user's credit card having already been validated. A screen showing the status of the add money transaction is displayed, showing a transaction number and a new current balance, reflecting the amount added by the just-completed credit card transaction.

In an alternate embodiment of the present invention, after the money has been added to the account, the amount of money added to the account may be allocated between subaccounts the end of the add money process at step 616. If the advertiser has no subaccounts, all of the money in the account is a general allocation. However, if the advertiser has more than one subaccount, the system will display a confirmation and default message prompting the advertiser to "Allocate Money Between Subaccounts".

The menu selection "Allocate Money Between Subaccounts" may be invoked when money is added to the advertiser account, or it may be invoked within the "Account Management". The "Account Management" is accessible from the Advertiser Main Page. This "Allocate Money Between Subaccounts" menu selection permits an advertiser to allocate current and any pending balances of the advertiser's account among the advertiser's subaccounts. The system will then update the subaccount balances. The current balance allocations will be made in real time, while the pending balance allocations will be stored in the persistent state. A routine will be invoked to update the subaccount balances to reflect the pending balance allocations when the payment for the pending balance is processed. Automatic notification may be sent to the advertiser at that time, if requested. This intuitive online account management and allocation permits advertisers to manage their online advertising budget quickly and efficiently. Advertisers may replenish their accounts with funds and allocate their budgets, all in one easy web-based session. The computer-based implementation eliminates time consuming, high cost manual entry of the advertiser's account transactions.

The "Allocate Money Between Subaccounts" routine begins when an advertiser indicates the intent to allocate money by invoking the appropriate menu selection at the execution points indicated above. When the advertiser indicates the intent to allocate, a function is invoked by the system to determine whether there are funds pending in the current balance (i.e., unactivated account credits) that have not yet been allocated to the advertiser's subaccounts, and

displays the balance selection options. In a preferred embodiment of the present invention, an account instance is created and a pending current balance account field is set from the persistent state.

If there are no unallocated pending funds, the system may display the current available balances for the account as a whole as well as for each subaccount. The advertiser then distributes the current available balance between subaccounts and submits a request to update the balances. A function is invoked which calculates and displays the current running total for subaccount balances. The current running total is stored in a temporary variable which is set to the sum of current balances for all subaccounts for the specified advertiser. The function also validates the new available subaccount balances to make sure that the total does not exceed the authorized amount. If the new advertiser-set available subaccount balances does not exceed the authorized amount, a function is invoked which will update all of the subaccount balances in the persistent state and display the update in read-only format.

If there are pending funds in the current account balance, the pending funds must be allocated separately from the available current balance. The pending funds will then be added into the available current balance when the funds are received. The function must therefore prompt the advertiser to choose between allocating pending funds or allocating available funds. The allocating pending funds selection works in much the same manner as the allocating available funds selection outlined above. After the advertiser chooses to allocate pending funds, a routine is invoked to display current pending balances for the account and the subaccounts. The advertiser distributes the pending subaccount balances between campaigns and submits a request to update the balances. A function is invoked which calculates and displays the current running totals for the pending subaccount balances. This function also validates the new pending subaccount allocations to make sure that the allocations do not exceed any authorized amount. The current running total of pending allocations is set to the sum of current pending balances for all subaccounts for the advertiser. If the new user-set pending subaccount balances or the total of such balances do not exceed any authorized amount, the function will update all of the pending subaccount allocations in the persistent state, e.g. the advertiser's account in the database, and display the update in read-only format.

A routine displaying the account management menu may be invoked from the advertiser main menu. Aside from the "Allocate Money Between Subaccounts" selection described above, the remaining selections all use to some extent the search listings present in the advertiser's account on the database, and may also affect the advertiser's entry in the search result list. Thus, a further description of the search result list generated by the search engine is needed at this point.

When a remote searcher accesses the search query page on the search engine server 404 and executes a search request according to the procedure described previously, the search engine server 404 preferably generates and displays a search result list where the "canonicalized" entry in search term field of each search listing in the search result list exactly matches the canonicalized search term query entered by the remote searcher. The canonicalization of search terms used in queries and search listings removes common irregularities of search terms entered by searches and web site promoters, such as capital letters and pluralizations, in order to generate relevant results. However, alternate schemes for determining a match between the search term field of the

search listing and the search term query entered by the remote searcher are well within the scope of the present invention. For example, string matching algorithms known in the art may be employed to generate matches where the keywords of the search listing search term and the search term query have the same root but are not exactly the same (e.g., computing vs. computer). Alternatively a thesaurus database of synonyms may be stored at search engine web server 24, so that matches may be generated for a search term having synonyms. Localization methodologies may also be employed to refine certain searches. For example, a search for "bakery" or "grocery store" may be limited to those advertisers within a selected city, zip code, or telephone area code. This information may be obtained through a cross-reference of the advertiser account database stored at storage 32 on account monitoring server 402. Finally, internationalization methodologies may be employed to refine searches for users outside the United States. For example, country or language-specific search results may be generated, by a cross-reference of the advertiser account database, for example.

The "Account Management" menu also may provide advertisers with a "Project Expenses" selection. In this selection, the advertiser specifies a search listing or subaccount for which the advertiser would like to predict a "daily run rate" and "days remaining to expiration." The system calculates the projections based on a cost projection algorithm, and displays the predictions to the advertiser on a read-only screen. The predictions may be calculated using a number of different algorithms known in the art. However, since the cost of a search listing is calculated by multiplying the bid amount by the total number of clicks received by the search listing at that bid amount during a specified time period, every cost projection algorithm must generally determine an estimated number of clicks per month (or other specified time period) for a search listing. The clicks on a search listing may be tracked via implementation of a software counting mechanism as is well known in the art. Clicks for all search listings may be tracked over time, this data may be used to generate estimated numbers of clicks per month overall, and for individual search terms. For a particular search term, an estimated number of searches per day is determined and is multiplied by the cost of a click. This product is then multiplied by a ratio of the average number of clicks over the average number of impressions for the rank of the search listing in question to obtain a daily run rate. The current balance may be divided by the daily run rate to obtain a projected number of days to exhaustion or "expiration" of account funds.

In an embodiment, the cost projection algorithm is based on a simple predictor model that assumes that every search term performs in a similar fashion. This model assumes that the rank of the advertiser's search listing will remain constant and not fluctuate throughout the month. This algorithm has the advantages of being simple to implement and fast to calculate. The predictor model is based on the fact that the click through rate, e.g. the total number of clicks, or referrals, for a particular searcher listing, is considered to be a function of the rank of the search listing. The model therefore assumes that the usage curve of each search term, that is, the curve that result when the number of clicks on a search listing is plotted against the rank of the search listing, is similar to the usage curve for all search terms. Thus, known values extrapolated over time for the sum of all clicks for all search terms, the sum of all clicks at a given rank for all search terms, and the sum of all clicks for the selected search term may be employed in a simple proportion to

determine the total of all clicks for the given rank for the selected search term. The estimated daily total of all clicks for the selected search term at the selected rank is then multiplied by the advertiser's current bid amount for the search term at that rank to determine a daily expense projection. In addition, if particular search terms or classes of search terms are known to differ markedly from the general pattern, correction values specific to the search term, advertiser, or other parameter may be introduced to fine-tune the projected cost estimate.

Finally, the "Account Management" menu may provide several selections to view information related to the advertiser's campaigns. The "View Subaccount Information" selection displays read-only information related to the selected subaccount. The "View Search Term List" selection displays the list of the advertiser's selected search terms along with the corresponding URLs, bid price, and rank, with the search terms preferably grouped by subaccount. The advertiser may also view current top bids for a set of search terms selected from a list of search terms from a read-only display generated by the system upon receiving the requested search terms from the advertiser.

For an advertiser who requires a more comprehensive report of search listing activity, the "View Report" option may be selected from the Advertiser Main Page. In an embodiment of the present invention, the "View Report" options generate reports comprehensive for up to one year preceding the current date. For example, daily reports are available for the each of the immediately preceding 7 days, weekly reports for the preceding four weeks, monthly reports for the preceding twelve months, and quarterly reports for the last four quarters. Additional reports may also be made available depending on advertiser interest. Other predefined report types may include activity tracked during the following time periods: Since Inception of the Account, Year To Date, Yearly, Quarter To Date, Month To Date, and Week to Date. Report Categories may include a Detail Report, viewable by Advertiser Account, by Search Listing, and by URL, and a Summary Report, viewable by Advertiser Account and by Subaccount. The reports may include identification data such as advertiser account and subaccount name, the dates covered by the report and the type of report. In addition, the reports may include key search listing account data such as current balance, pending current balance, average daily account debit, and run rate. Furthermore, the reports may also include key data, such as: search terms, URLs, bids, current ranks, and number of clicks, number of searches done for the search term, number of impressions (times that the search listing appeared in a search result list), and click through rate (defined as Number of Clicks/Number of Impressions). Preferably, the report is available in at least HTML view options for viewing via a browser program, printing, or downloading. Note, however, that other view options may be made available, such as Adobe Acrobat, PostScript, ASCII text, spreadsheet interchange formats (e.g., CSV, tab-delimited), and other well-known formats.

When the advertiser has selected the "View Report" option, the system invokes a function which displays a list of available report types, dates, categories, and view options. The system preferably creates a report instance with the following fields, all of which are initially set to null: report type, report date, report category, and view option. Once the advertiser has defined the parameters described above, the system invokes a function to generate the requested report, based on the advertiser-set parameters, and to display the report, based on the view option parameter.

XI. Agent Execution Cycling

FIG. 5 is a flow diagram of a typical agent execution 500. Multiple agents may be executed simultaneously. The agents describe in reference to FIG. 1, including the bulk adjustment agent 122, the account aging agent 124, the search listing agent 126, the auto charge agent 128, the fixed budget agent 130, the reconciled balance agent 132, the real-time click agent 134, and the CTP agent 136. The agent execution 500 may be executed on different physical computers or on a single computer. In block 502, the agent determines its status. The status may be, for example, disable or enabled. If the agent's status is disabled, then the agent enters a delay 508 before checking its status 502 again. If the agent is enabled, the method is executed 504. Each agent may be associated with one or more methods, such that every time the agent is enable and run, those method(s) are executed. When the method completes some or all of its tasks, the method will return a recode, for example "true" or "false." Other return codes may also be returned by the agent. In block 506, the return code from method is checked to see if the method needs to be executed a second time. The method may need to be executed again because it did not completed all of its tasks. For example, an method may need to enter an account entry and have it committed to the books, which requires ending the method's process. Then the method needs to perform a task on that committed entry. In an illustrative example, a return code of "true" indicates that the method needs to be executed again before the agent enters the delay 508. In block 508, the agent waits for a specified delay time before cycling through the agent execution 500 a again. The delay may be any value, for example 30 Second.

XII. Method of Determining Definitive Click Charges

FIG. 6 is a flow diagram that illustrates a method 600 of determining definitive click charges. The CTP agent 136 (FIG. 1) may call the account service 930 (FIG. 9) to perform the method 600 of determining definitive click charges. In block 602, data is retrieved from the definitive click charge table. The data is then ordered, for example by start time and account ID. In block 604, if a timeout condition occurred, the agent is terminated and a return code of "True" is returned. In block 606, the information for the next account is fetched. If there is no next account, then the agent is ended and a return code of "false" is provided. In block 608, if the record has expired then block 626 is executed, otherwise block 610 is executed. In block 610, the account balance is locked. If the account balance lock is not successful then block 604 is executed, otherwise block 612 is executed. In block 612, if a click charge bucket entry for the account and the current period exists then block 614 is executed, otherwise block 616 is executed. In block 614, a definitive click charge bucket entry is added to replace the existing entry. The definitive click charge bucket entry may include the click charge amount for the current account and time period. In block 616, a definitive click charge bucket entry is added. In block 618, the various balances are recalculated. The balances may include the working balance, definitive balance, and monitoring balances. In block 620, the account balance is checked to determine if it is sufficient. For example, if the account is a prepaid account with a fixed budget or a prepay deposit account and the account has a definitive balance is greater than zero. If the balance is sufficient, then block 622 is executed. If the balance is not sufficient, then block 624 is executed. In block 624, an auto-settlement transaction is created to bring the definitive balance to zero dollars and the auto-settlement flag is set to "off." In block 622, the account monitor is executed. The

account monitor may be the account monitor described with reference to FIG. 3 above. In block 626, the charge is removed from the definitive click charge table.

XIII. Method of Accounting for Click Results

FIG. 7 illustrates a method 700 of accounting for click results. The realtime click agent 134 (FIG. 1) may call the account balance service 930 (FIG. 9) to perform the method 700 of accounting for click results. In block 702, entries from the results clicks queue are retrieved, for example the results click queue entries may be retrieved in groups of ten. Then a result click list is generated and may be ordered by account ID. In block 704, the next click from the click list is retrieved. If the result click list is empty then the method is terminated and a return code of "True" is returned.

In block 706, the click is screened to determine if it is a chargeable click. A click that is not chargeable may be a duplicate click, for example as a result of a users clicking twice on a listed link. Other types of non-chargeable clicks may be clicks generated at the search engine provider's location for test and debug purposes. In block 708, the click is screened to determine if it is a fraudulent click. Multiple filter may be used to detect fraudulent clicks. The filters may be run on different subsets of data and at different times. For example, the filters may include a memory-based CTP filter, a network-based CTP filter, a database-based CTP filter, and others. For example, multiple clicks that have the same session ID and the same resource ID are considered duplicates and multiple clicks with the same search ID and the same resource ID are considered duplicate clicks. A session ID identifies a user's session with a search engine and may be a 64 bit code. A resource ID identifies the target web site and may be the target web site's URL. A search ID identifies the search.

In block 710, if definitive click information exist then block 716 is executed, otherwise block 712 is executed. In block 712, if a click charge bucket exist for this click, the click charge is added to the click charge bucket, otherwise a non-definitive click charge bucket entry is added. In block 714, the click charge amount is deducted from the working balance. In block 716, the click is removed from click list.

XIV. Method of Reconciling Balances

FIG. 8 illustrates a method 800 of reconciling balances. The reconcile balance agent 132 (FIG. 1) may call the account balance service 930 (FIG. 9) to perform the method 800 of reconciling balances. In block 802, data is retrieved from the reconciled balance table. In block 804, if a timeout condition has occurred, the method 800 is terminated and a return code of "True" is returned. If no timeout condition exists then block 806 is executed. In block 806, the information for the next account is fetched. If no next account exists then the method 800 ends with a return code of "False." If a next account does exist, block 808 is then executed. In block 808, whether the record has expired is determined. If the record has expired block 820 is executed. If the record has not expired then block 810 is executed. In block 810, the account balance is locked. If the account balance is not locked successfully, block 804 is executed. If the account balance is locked successfully, block 812 is executed. In block 812, this account's click charge bucket entries dated before the most recent click charge time stamp are remove from the click charge bucket. The various balances are adjusted. The balances may include the reconciled balance, the working balance, the definitive balance and the monitoring balance. In block 814, the auto-settlement flag is set to "OK" if the definitive balance is positive and the auto-settlement flag is set to "OFF." In block 816, the

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account monitor is run if the monitoring balance changed. In block 820, the charge is removed from the reconciled balance table then block 804 is executed.

XV. Services

FIG. 9 is a block diagram of a system 900 including the account monitor services 902. The services 902 include the payment service 910, the credit card service 920, and the account service 930. The payment service 910 includes sub-services such as charge/refund card 912 and adjust balance 914. The adjust balance 914 sub-service may add or deduct funds in an account in the account database 940. The charge/refund card 912 sub-service interfaces with the credit card service 920 to get or pay funds to and from a user's credit card account via an external credit card system 950. The external credit card system 950 may any credit card system including CyberSource®, Wells Fargo®, or others. The credit card service 920 may process information from the payment service 910 and format and configure the information for each of the particular external credit card system 950. The account services sub-service 930 allows an customer service representative to get or set an account status 932 and get and set an account balance 934 from the account database 940. When the services 902 perform a task that might change the account status, the account monitor is executed to evaluate the account status.

XVI. Optional Account Adjustments for Taxes

An account may be adjusted for various taxes, such that the net effect on the user's account is tax adjusted. If a user's account is subject to taxation, the tax may be applied at the time of deposit or at the time of invoice. Prepay accounts typically have the taxes applied when funds are deposited. Invoice accounts typically have the taxes applied when the invoice is prepared. Such tax adjustments may be useful in countries with value added taxes (VAT) such as Britain.

For accounts that have taxes applied upon deposit of funds, the amount charged to the customer's account will be the amount desired to be deposited plus the amount of the taxes. For example, if a customer wishes to deposit \$100 and the tax is 17.5%, the customer's account, for example the customer's credit card account, will be charged \$117.5. The taxes may be federal, state, or local taxes, including sales taxes or other types of taxes. The various balances, including the working balance, the definitive balance, and the reconciled balance, are then increased by the amount deposited. As charges for that account accrue, for example click charges, the various balances are reduced by the charges without consideration for taxes.

For accounts that have taxes applied upon being invoiced, the various balances are reduced by the tax adjusted charges. For example, if \$10 of click charges are accrued and the account has a 17.5% tax, the various balances for that account will be reduced by \$11.75. The various balances may include the monitoring balances.

The foregoing detailed description should be regarded as illustrative rather than limiting and the appended claims, including all equivalents, are intended to define the scope of the invention.

The invention claimed is:

1. A method of generating an ordered search list via a search engine, the method comprising:
 - receiving from a searcher over a network a search request, the search request having at least one search term;
 - retrieving from a search results database a set of search listings associated with the search term, wherein at least some of the retrieved search listings in the set are associated with an advertiser's account such that the

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advertiser's account is charged a priced amount if a chargeable event occurs in connection with a selected search listing of the advertiser;

determining an account balance for the advertiser's account based on a difference between charges and deposits from respective advertisers, including determining a reconciled balance for the advertiser's account, where the reconciled balance comprises a difference between deposits and a set of current chargeable event charges;

ordering the search listings into a search result list according to a predetermined ordering methodology, including ordering the search listings associated with advertisers with reconciled balances that are below a reconciled threshold as if their priced amount was zero, and including ordering the search listings after disregarding charges for non-chargeable events to reduce over-delivery of the search listings and reduce over-billing of competing advertisers;

providing the ordered search list to the searcher via the network; and

assessing charges to the advertiser's account as a function of the searcher selection of the search listing, including generating a result event list,

eliminating from the result event list events which are non-chargeable events or fraudulent events, and

deducting an event charge amount from the account balance for the advertiser's account.

2. The method of claim 1 wherein determining an account balance comprises determining a definitive balance for an advertiser's account, where the definitive balance is the reconciled balance adjusted for charges and deposits after those included in the reconciled balance.

3. The method of claim 2 wherein the definitive balance is the reconciled balance less any new definitive chargeable event charges plus any new credit card charges and plus any new adjustments.

4. The method of claim 3 wherein determining an account balance comprises determining an estimated definitive balance for an advertiser's account, where the estimated definitive balance is the definitive balance less an estimated amount of new definitive chargeable event charges.

5. The method of claim 4 wherein determining an account balance comprises determining a monitoring balance for an advertiser's account, where the monitoring balance is smaller of the estimated definitive balance plus a credit limit and a remaining capital amount.

6. The method of claim 3, wherein the definitive chargeable event charges are chargeable event charges that have passed a fraud filter.

7. The method of claim 6, wherein the chargeable event is a click and the fraud filter detects double clicks as non-chargeable clicks.

8. The method of claim 7, wherein the fraud filter detects multiple clicks on a search listing in a search list from a searcher as non-chargeable clicks.

9. The method of claim 7, wherein the fraud filter detects multiple clicks on a search listing from a searcher during a session as non-chargeable clicks.

10. The method of claim 6, wherein the non-definitive chargeable event charges are charges that have passed a real-time fraud filter and the definitive chargeable event charges are charges that have passed a second fraud filter that uses data generated after a charge is charged to determine if that charge is fraudulent.

11. The method of claim 2 wherein determining an account balance comprises determining a working balance

for an advertiser's account, where the working balance is the definitive balance adjusted for any new non-definitive chargeable event charges.

12. The method of claim 2, wherein the threshold is zero dollars.

13. The method of claim 1 wherein the predetermined ordering methodology comprises:

ordering the search listings in accordance with a relative relevance methodology.

14. The method of claim 13 wherein the relative relevance methodology comprises:

ordering search listings so that search listings associated with advertisers' account balances that are below a threshold are ordered as if their priced amount was zero.

15. The method of claim 13 wherein the relative relevance methodology comprises:

ordering the search listings by relative amounts respective advertisers have agreed to pay.

16. The method of claim 15 wherein the relative relevance methodology comprises:

ordering the search listings by bid amounts of the respective advertisers.

17. The method of claim 13 wherein the relative relevance methodology comprises ordering the search listings by respective popularity of the search listings.

18. The method of claim 14 wherein the relative relevance methodology comprises ordering the search listings alphabetically.

19. A computer-readable storage medium storing a network search engine for generating an order search list comprising:

a search results database having a plurality of search listings, wherein each search listing is associated with a network location and a respective priced amount;

an account database that maintains account information associated with search listings;

an account monitoring system that monitors accounts in the account database and determines an account balance for each account, including determining a reconciled balance for an advertiser's account, the reconciled balance including a difference between deposits and a set of current chargeable event charges, the account monitoring system configured to deduct event charge amounts from the account balance for an account upon the occurrence of a predetermined event for a search listing associated with the account, the account monitoring system further configured to eliminate event charge amounts which are non-chargeable to the account; and

a search engine which receives from a searcher over a network a search request, the search request having at

least one search term, the search engine retrieving from the search results database at least one of the search listings associated with the search term, the search engine generating an ordered search result list including the at least one of the search listings from the search results database for which the account balance determined by the account monitoring system is above a threshold, the search engine ordering search listings in the ordered search result list based on respective priced amounts of the ordered search listings, the search engine ordering search listings for which a reconciled account balance does not exceed a reconciled threshold as if the respective priced amount for a given search term was zero, or ordering the search listings as if the respective priced amount for a given search term was above zero and below all other non-zero priced amounts in the ordered search result list to reduce over-delivery of the search listings and reduce over-billing of competing advertisers.

20. A computer-readable storage medium of claim 19 wherein the account monitoring system includes a real-time chargeable event agent that determines chargeable event charges for searchers' access to network sites associated with the search listing in substantially real-time.

21. A computer-readable storage medium of claim 19, wherein the account monitoring system includes an auto-charging agent that automatically charges a credit card account when the account balance is below a second threshold.

22. A computer-readable storage medium of claim 19 wherein the account monitoring system includes an auto-charging agent that automatically charges a credit card account on a periodic basis.

23. A computer-readable storage medium of claim 19, wherein the account monitoring system includes a fraud protection agent that accesses a fraud detection system to determine if any chargeable event charges are non-chargeable because the events associated with the charges were fraudulent.

24. A computer-readable storage medium of claim 19, wherein the account monitoring system includes a search listing agent that updates the search results database when an account crosses a threshold and that search listing is treated as having a priced amount of zero.

25. A computer-readable storage medium of claim 19, wherein the account monitoring system includes a bulk adjustment agent that automatically adjusts account balances with a minimum charge when the chargeable event charges are below a threshold.

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Reply Brief

Appendix C – Related Proceedings Appendix

None